

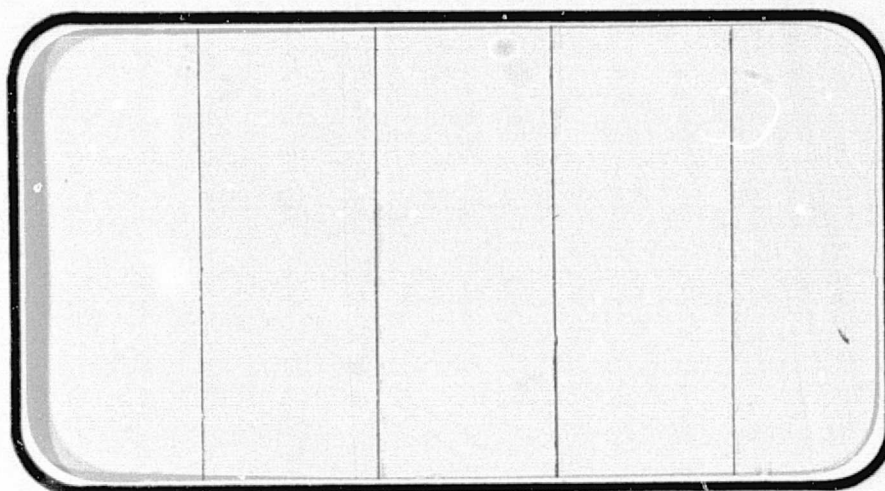
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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION



(NASA-CR-144610) AEROHEATING (PRESSURE)
CHARACTERISTICS ON A 0.010-SCALE VERSION OF
THE VEHICLE 3 SPACE SHUTTLE CONFIGURATION
(26-OTS) IN LANGLEY RESEARCH CENTER 4-FOOT
WIND TUNNEL (IH4) (Chrysler Corp.) 473 p

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SPACE SHUTTLE

AEROTHERMODYNAMIC DATA REPORT



JOHNSON SPACE CENTER

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NASA CR-144,610
VOLUME 3 OF 4

AEROHEATING (PRESSURE) CHARACTERISTICS ON A
0.010-SCALE VERSION OF THE VEHICLE 3 SPACE SHUTTLE
CONFIGURATION (26-OTS) IN THE LANGLEY RESEARCH CENTER
4-FOOT WIND TUNNEL (IH4)

by

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Prepared under NASA Contract Number NAS9-13247

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Johnson Space Center
National Aeronautics and Space Administration
Houston, Texas

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AEROHEATING (PRESSURE) CHARACTERISTICS ON A
0.010-SCALE VERSION OF THE VEHICLE 3 SPACE SHUTTLE
CONFIGURATION (26-OTS) IN THE LANGLEY RESEARCH CENTER
4-FOOT WIND TUNNEL (IH4)

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ABSTRACT

This report presents the results of wind tunnel tests, IH4, conducted at the Langley Research Center Unitary Plan Wind Tunnel. The model tested was an 0.010-scale version of the Vehicle 3 Space Shuttle Configuration. Pressure measurements were made on the launch configuration, Orbiter alone, external tank alone, and solid rocket booster alone, to provide heat transfer pressure data.

The tests were conducted for a Mach number range from 2.36 to 4.6 and Reynolds number range from 1.2 to 5×10^6 per foot. The model was tested at angles of attack from -10° to 20° for a sideslip angle range from -5° to $+5^\circ$, and at sideslip angles from -5° to 48° for 0° angle of attack.

This report for IH4 consists of four volumes:

Volume 1 - data figures 4 through 47

Volume 2 - data figures 48 through 92

Volume 3 - tabulated source data, pages 1-401 (R data sets)

Volume 4 - tabulated source data, pages 402-926 (M and A data sets).

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- B) $C_p/C_{p_{stag}}$ versus X/C_W
- C) $C_p/C_{p_{stag}}$ versus X/C_V
- D) $C_p/C_{p_{stag}}$ versus X/L_T ; $C_p/C_{p_{stag}}$ versus θ
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- F) P_i/P_u versus X/L_b ; P_i/P_u versus ϕ
- G) P_i/P_u versus X/C_W
- H) P_i/P_u versus X/C_V
- I) P_i/P_u versus X/L_T ; P_i/P_u versus θ
- J) P_i/P_u versus X/L_{SRB} ; P_i/P_u versus ψ

NOMENCLATURE

<u>PLOT SYMBOL</u>	<u>MNEMONIC</u>	<u>DEFINITION</u>
a		speed of sound, ft/sec
A_b		base area, ft ²
b	BREF	wing span or reference span, in
c.g.		center of gravity
$\frac{l_{ref}}{\bar{c}}$	LREF	reference length or wing mean aerodynamic chord, in
c	C	local wing chord, in
C_p	CP	local pressure coefficient; $(P_n - P_\infty)/q$
C_{pstag}	CPSTG	stagnation pressure coefficient
C_p/C_{pstag}	CP/CPS	ratio of local static pressure coefficient to stagnation pressure coefficient
	CONFIG	configuration
	F.S.	fuselage station, in
	I.V.	integrated vehicle
L	L	actual length of component, in
MACH	MACH	Mach number, V/a
	M.S.	missile station, in
P_ℓ	PL	local static pressure; $1/2\rho v^2$, psi
	POINT	data point number
P_∞	PINF	freestream static pressure, psi
P_i/P_u	PI/PU	interference to undisturbed pressure ratio
P_ℓ/P_∞	PR	ratio of local static pressure to freestream static pressure

NOMENCLATURE (Continued)

<u>PLOT SYMBOL</u>	<u>MNEMONIC</u>	<u>DEFINITION</u>
	PORT	Scanivalve port number
	RUN	run number
RN/L	RN/L	unit Reynolds number, per ft
	S-V VALVE	Scanivalve number
q	Q(Psi)	dynamic pressure; $1/2\rho v^2$, psi
	SREF	wing area or reference area, ft^2
	MRP	moment reference point
	XMRP	moment reference point on X axis, in
	YMRP	moment reference point on Y axis, in
	ZMRP	moment reference point on Z axis, in
T	T	temperature, °F
V	V	velocity, ft/sec
X/L _b	X/LB	distance from nose of orbiter divided by orbiter length
X/L _T	X/LT	distance from external tank nose divided by external tank length
X/L _{SRB}	X/LSRB	distance from SRB nose divided by SRB length
X/C _W	X/CW	distance from wing leading edge divided by wing chord length
X/C _V	X/CV	distance from vertical tail leading edge divided by vertical tail chord length
X	X	longitudinal distance from nose of component, in

NOMENCLATURE (Continued)

<u>PLOT SYMBOL</u>	<u>MNEMONIC</u>	<u>DEFINITION</u>
Y	Y	lateral distance from center-line of component, in
Y/b/2	2Y/BW	distance from fuselage center-line outboard divided by semi-span length
Z	Z	vertical distance from reference plane of component, in
Z/bv	Z/BV	distance from orbiter station $Z_0 = 500$ divided by vertical tail span
α	ALPHA	angle of attack, deg
β	BETA	angle of sideslip, deg
ψ	PSI	SRB ray angle measured clockwise, looking forward, from bottom center-line, deg
ϕ	PHI	orbiter ray angle measured clockwise, looking forward, from bottom center-line, deg
θ	THETA	external tank ray angle measured clockwise, looking forward, from bottom center-line, deg
ρ	RHO	mass density, slugs/ft ³
μ	MU	freestream viscosity, lb-sec/ft ⁴

SUBSCRIPTS

	o	SSV reference system
	1	conditions upstream of a shock wave
	2	conditions downstream of a shock wave
b	B	body
	FS	fuselage station, in

NOMENCLATURE (Concluded)

SUBSCRIPTS (Continued)

<u>PLOT SYMBOL</u>	<u>MNEMONIC</u>	<u>DEFINITION</u>
	FULL	full scale
i	I	interference-integrated vehicle data
	LE	leading edge
l	L	local
	MS	missile station, in
n	ORI NO	orifice number, n = integer
O	O	Orbiter
S SRB	SRB	Solid Rocket Booster
s		static conditions
stag	S	stagnation conditions
T	T	external tank
t		total conditions
u	U	undisturbed-component alone data
v	V	vertical tail
W	W	wing
∞		freestream

CONFIGURATIONS INVESTIGATED

(1) $O_1 + T_{15} + S_8 N_{16}$ - Integrated Vehicle

O_1 = Orbiter - B_{17} C_7 M_4 F_5 W_{103} E_{22} V_7 R_5

B_{17} - Fuselage

C_7 - Canopy

M_4 - OMS Pods

F_5 - Body Flap

W_{103} - Wing

E_{22} - Elevon

V_7 - Vertical Tail

R_5 - Rudder

T_{15} = External Tank with protuberances

S_8 = Solid Rocket Booster

N_{16} = BSRM nozzles

(2) $O_1 + T_{22} + S_8 N_{16}$ - Integrated Vehicle

T_{22} = External Tank without protuberances

(3) O_1 - Orbiter

(4) T_{15} - External Tank Alone

(5) $S_8 N_{16}$ - Solid Rocket Booster Alone

TEST FACILITY DESCRIPTION

The NASA LaRC 4 foot Unitary Plan Wind Tunnel (UPWT) is a closed-circuit, continuous flow, variable density facility. The test section is 4 feet by 4 feet by 7 feet long.

Two tunnel legs are available for supersonic testing in the Mach number ranges 1.47 to 2.86 (Leg No. 1) and 2.29 to 4.63 (Leg No. 2). All of these tests were made in Leg No. 2. An asymmetric, sliding block nozzle position and total pressure setting provide the test Mach numbers at a specified Reynolds number. Reynolds number can be varied from 0.76 to 7.78 million per foot. Available stagnation pressure variation is 4.0 to 142. psia. Dynamic pressure variation is 95. to 1260. psf with normal operating stagnation temperature about 150°F in Mach modes 2 or 3 and about 175°F in Mach mode 4. The tunnel is equipped with a dry air supply, an evacuating system, and a cooling system. The facility power is approximately 83,000 horsepower.

Model mounting provisions consist of various sting arrangements, including axial (longitudinal), lateral (independent pitch and yaw), and roll movement with side wall support. A Schlieren system and oil flow visualization equipment are available. Data are recorded at the tunnel and reduced off-line at the Langley Computer Center. The tunnel is used for force and moment, pressure, and dynamic stability tests. Hot and cold jet effects and heat transfer have been studied in the UPWT.

TESTING AND PROCEDURE

Before model installation, each of the 341 model orifices were checked for leaks and continuity. The location of each of the orifices on the model is presented in Table 4. It was found during this check that orifices 43, 738, and 766 were open and that orifices 121, 532, 553, 558, 590, and 715 were plugged. Of these, only orifice 43 was recorded during the tests.

During model installation, the good orifices were connected to twelve Scanivalves as indicated in Tables 5 and 6. A system leak and continuity check was made at this time and all orifices were reading good except 701 which was plugged after data point 104. No further checks were made because none of these connections were broken during the test.

A vacuum was connected to port 0 and a 1 psi reference pressure to ports 1 and 2 of each Scanivalve. Additional reference pressures of 5 psi were connected to the first two ports that were open after all model pressures were recorded on each Scanivalve. On the Scanivalves that used 10 psi transducers, the next two ports had a 10 psi reference pressure connection. The vacuum was used as a zero point in data reduction and the reference pressures were used as a check on the transducer calibrations during running, and, if necessary, to adjust the pretest calibration of the transducers. To increase the accuracy of the data, the transducers used in each of the twelve Scanivalves were arranged by pressure range depending on which configuration was being tested and on estimated pressure measurement levels. The actual transducer range used in each Scanivalve is presented in Table 7. After each transducer change, a check was made to ensure that there were no leaks.

DATA REDUCTION

Standard Langley Research Center methods were used to obtain local static pressures in psi, P_n .

The local static pressure coefficient for each orifice was calculated by:

$$C_{p_n} = (P_n - P_1)/q_1$$

The ratios of local static pressure to freestream static pressure upstream of the shock wave were calculated by:

$$PR_1 = P_n/P_1$$

The ratios of local static pressure to total pressure downstream of the shock wave were calculated by:

$$PR_2 = P_n/P_{t2}$$

The stagnation pressure coefficients were calculated by:

$$C_{p_{stag}} = (P_{t2} - P_1)/q_1$$

The ratios of local static pressure coefficient to stagnation pressure coefficient were calculated by:

$$C_{p_n}/C_{p_{stag}} = (P_n - P_1)/(P_{t2} - P_1)$$

If the data was from a component alone run, this equation provided the ratio of local static pressure coefficient undisturbed to stagnation pressure coefficient, $C_{p_u}/C_{p_{stag}}$. However, if the data was from an integrated component run, this equation provided the ratio of local static pressure coefficient interference to stagnation pressure coefficient, $C_{p_i}/C_{p_{stag}}$.

DATA REDUCTION (Concluded)

The ratios of local static pressure interference to local static pressure undisturbed were calculated by:

$$P_i/P_u = (P_{ni} - P_1)/(P_{nu} - P_1)$$

TABLE I.

TEST : IH4		DATE : 11/12/73	
TEST CONDITIONS			
MACH NUMBER	REYNOLDS NUMBER (per ft x 10 ⁶)	DYNAMIC PRESSURE (pounds/sq. inch)	STAGNATION TEMPERATURE (degrees Fahrenheit)
2.36	1.2	1.87	150
2.36	3.0	4.67	150
2.95	1.2	1.62	150
2.95	3.0	4.04	150
2.95	5.0	6.73	150
3.7	1.2	1.26	150
3.7	3.0	3.15	150
3.7	5.0	5.26	150
4.6	1.2	0.98	175
4.6	3.0	2.45	175
4.6	5.0	4.09	175

BALANCE UTILIZED:	NONE		
	CAPACITY:	ACCURACY:	COEFFICIENT TOLERANCE:
NF	_____	_____	_____
SF	_____	_____	_____
AF	_____	_____	_____
PM	_____	_____	_____
RM	_____	_____	_____
YM	_____	_____	_____

COMMENTS: Pressure Transducers accuracy $\pm 1\frac{1}{2}\%$ of rated load.

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TABLE II. (Continued).

TEST: IH-4 (UPWT 10.59)			DATA SET/POINT NUMBER COLLATION SUMMARY										DATE: 3/31/76 (REVISED)									
DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES				NO. OF PTS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)													
		α	β	RN/L					2.36	2.95	3.7	4.6										
RQ3YBB	$\phi_1 + T_{22} + S_B N_{16}$	-10	0	3.0				2				33	37									
	(INTEGRATED	-5	0	3.0				2				34	38									
	VEHICLE WITHOUT	0	0	3.0				2				35	39									
	PROTUBERANCES)	+5	0	3.0				2				36	40									
RQ3YCA	ϕ_1	-5	0	1.2				2				65	100									
	(ORBITER	0	0	1.2				4	44	61		66	101									
	ALONE)	5	0	1.2				4	45	62		67	102									
		10	0	1.2				4	46	63		68	103									
		20	0	1.2				4	47	64		69	104									
RQ3YCB		-10	0	3.0				2				70	85									
		-5	0	3.0				2				71	86									
		0	0	3.0				4	48	57		72	87									
		5	0	3.0				4	49	58		73	88									
		10	0	3.0				4	51	59		74	89									
		20	0	3.0				4	52	60		75	90									

B = ORBITER FUSELAGE
U = UPPER WING
L = LOWER WING
V = VERTICAL TAIL

COEFFICIENT SCHEDULES

IDVAR (1)	IDVAR (2)	NDV
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TABLE II. (Continued).

TEST: IH-4 (Upwt 1089)				DATA SET/POINT NUMBER COLLATION SUMMARY										DATE: 3/31/76 (REVISED)			
DATA SET IDENTIFIER	CONFIGURATION	SCHD.		PARAMETERS/VALUES			NO. OF PTS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)									
		α	β	Roll				2.86	2.95	3.7	4.6						
RQ3YCC	<u>01</u>	-5	0	5.0			2			80	95						
		0	0	5.0			3		53	81	96						
		5	0	5.0			3		54	82	97						
		10	0	5.0			3		55	83	98						
		20	0	5.0			3		56	84	99						
RQ3YCD		-5	-5	3.0			2			76	91						
		0	-5	3.0			2			77	92						
RQ3YCE		-5	5	3.0			2			78	93						
		0	5	3.0			2			79	94						
RQ3TDA	<u>T13</u>	-5	0	1.2			2			119	133						
	(EXTERNAL	0	0	1.2			2			120	134						
RQ3TDB	<u>TANK ALONE</u>	-10	0	3.0			2			121	127						
		-5	0	3.0			2			122	128						
		0	0	3.0			2			123	129						
		5	0	3.0			2			124	130						
RQ3TDC		-5	0	5.0			2			125	131						
		0	0	5.0			2			126	132						

TEST RUN NUMBERS

TABLE II. (Continued).

DATA SET IDENTIFIER		CONFIGURATION	SCHD.		PARAMETERS/VALUES				NO. OF PTS	MACH NUMBERS (OR ALTERNATE INDEPENDENT VARIABLE)							
			α	β	RN/L					2.36	2.95	3.7	4.6				
RG3SEA	(*)	$S_8 N_{16}$	0	-5	1.2				1			141					
		(SRB	0	0	1.2				2			142	168				
		ALONE)	0	5	1.2				2			143	169				
RG3SEB		↓	0	-5	3.0				2			144	156				
			0	0	3.0				2			145	157				
			0	5	3.0				2			146	158				
			0	10	3.0				2			147	159				
RG3SEC			0	0	5.0				2			154	166				
		↓	0	5	5.0				2			155	167				
RG3SEF	(**)	$S_8 N_{16}$	0	-5	3.0				2			148	160				
		(SRB ALONE,	0	0	3.0				2			145	157				
		MODEL ROLLED)	0	5	3.0				2			149	161				
		↓	0	10	3.0				2			150	162				
			0	20	3.0				2			151	163				
			0	40	3.0				2			152	164				
			0	48	3.0				2			153	165				

TYPE OF DATA
 α OR β
SCHEDULES

(*) MODEL INSTALLED SO THAT $\alpha = -\theta$

(**) MODEL INSTALLED SO THAT $\psi_{270^\circ} = \psi_0^\circ$

COEFFICIENT SCHEDULES

IDVAR (1) IDVAR (2) NDV

TABLE II. - (Concluded).

RESULTANT DATA SET	DATA SET/DATA SET
AQ3BAA	MQ3BAA/MQ3BCA
AQ3UAA	MQ3UAA/MQ3UCA
AQ3LAA	MQ3LAA/MQ3LCA
AQ3VAA	MQ3VAA/MQ3VCA
AQ3TAA	MQ3TAA/MQ3TDA
AQ3SAA	MW3SAA/MQ3SEA
AQ3BAB	MQ3BAB/MQ3BCB
AQ3UAB	MW3UAB/MQ3UCB
AQ3LAB	MQ3LAB/MQ3LCB
AQ3VAB	MQ3VAB/MQ3VCB
AQ3TAB	MQ3TAB/MQ3TDB
AQ3SAB	MQ3SAB/MQ3SEB
AQ3BAC	MQ3BAC/MQ3BCC
AQ3UAC	MQ3UAC/MQ3UCC
AQ3LAC	MQ3LAC/MQ3LCC
AQ3VAC	MQ3VAC/MQ3VCC
AQ3TAC	MQ3TAC/MQ3TDC
AQ3SAC	MQ3SAC/MQ3SEC
AQ3BAD	MQ3BAD/MQ3BCD
AQ3UAD	MW3UAD/MQ3UCD
AQ3LAD	MQ3LAD/MQ3LCD
AQ3VAD	MQ3VAD/MQ3VCD
AQ3BAE	MQ3BAE/MQ3BCA
AQ3UAE	MQ3UAE/MQ3UCE
AQ3LAE	MQ3LAE/MQ3LCE
AQ3VAE	MQ3VAE/MQ3VCE

TABLE III. - MODEL DIMENSIONAL DATA

MODEL COMPONENT : BODY - B₁₇

GENERAL DESCRIPTION : Enceloge, 3 Configuration, Lightweight Orbiter
per Rockwell Lines VL70-000139.

MODEL SCALE: 0.010

DRAWING NUMBER VL70-000139

DIMENSIONS :

	FULL SCALE	MODEL SCALE
Length - In.	<u>1290.3</u>	<u>12.903</u>
Max Width - In.	<u>267.6</u>	<u>2.676</u>
Max Depth - In.	<u>244.5</u>	<u>2.445</u>
Fineness Ratio	<u>4.82175</u>	<u>4.82175</u>
Area - Ft ²	<u> </u>	<u> </u>
Max. Cross-Sectional	<u>386.67</u>	<u>0.03867</u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

TABLE III. - Continued.

MODEL COMPONENT : CANOPY - C7

GENERAL DESCRIPTION : Configuration 3 per Rockwell Lines

VL70-000139.

MODEL SCALE: 0.010

DRAWING NUMBER VL70-000139

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length ($x_o=433$ to $x_o=670$) in.FS	<u>237.0</u>	<u>2.37</u>
Max Width	<u> </u>	<u> </u>
Max Depth	<u> </u>	<u> </u>
Fineness Ratio	<u> </u>	<u> </u>
Area	<u> </u>	<u> </u>
Max. Cross-Sectional	<u> </u>	<u> </u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

TABLE III. - Continued.

MODEL COMPONENT: ELEVON - E₂₂GENERAL DESCRIPTION: 3 Configuration per W₁₀₃ Rockwell LinesVL70-000139 data for (1) of (2) sides.Model scale: 0.010DRAWING NUMBER: VL70-000139

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area - Ft ²	<u>205.52</u>	<u>0.02055</u>
Span (equivalent) - In.	<u>353.34</u>	<u>3.5334</u>
Inb'd equivalent chord	<u>114.78</u>	<u>1.1478</u>
Outb'd equivalent chord	<u>55.00</u>	<u>0.550</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>0.208</u>	<u>0.208</u>
At Outb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
Sweep Back Angles, degrees		
Leading Edge	<u>0.00</u>	<u>0.00</u>
Trailing Edge	<u>- 10.24</u>	<u>- 10.24</u>
Hingeline	<u>0.00</u>	<u>0.00</u>
Area Moment (Normal to hinge line)-Ft ³	<u>1548.07</u>	<u>0.00155</u>

TABLE III. - Continued.

MODEL COMPONENT : BODY FLAP - F₅

GENERAL DESCRIPTION : 3 Configuration per Rockwell Lines

VL70-000139

MODEL SCALE: 0.010

DRAWING NUMBER VL70-000139

DIMENSIONS :

FULL SCALE

MODEL SCALE

Length - In.

84.70

0.8470

Max Width - In.

267.6

2.676

Max Depth

Fineness Ratio

Area - Ft²

Max. Cross-Sectional

Planform

Wetted

Base

140.00

0.0140

38.0958

0.00380

TABLE III. - Continued.

MODEL COMPONENT: OMS Pods - M₄

GENERAL DESCRIPTION: Configuration 3 per Rockwell Lines VL70-000139.

NOTE: M₄ identical to M₃, except intersection to fuselage.

Model Scale = 0.010

DRAWING NUMBER VL70-000139

<u>DIMENSION:</u>	<u>FULL SCALE</u>	<u>MODEL SCALE</u>
Length - IN	<u>346.0</u>	<u>3.460</u>
Max Width - IN	<u>108.0</u>	<u>1.080</u>
Max Depth - IN	<u>113.0</u>	<u>1.130</u>
Fineness Ratio	<u> </u>	<u> </u>
Area - FT ²	<u> </u>	<u> </u>
Max Cross-Sectional	<u> </u>	<u> </u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>

TABLE III. - Continued.

MODEL COMPONENT: BSRM NOZZLES - N₁₆GENERAL DESCRIPTION: 3 Configuration BSRM Nozzles per Rockwell LinesVL77-000036 and VL72-000088, Data for (1) of (2) sidesModel Scale = 0.010DRAWING NO. VL72-000088
VL77-000036

DIMENSIONS	FULL-SCALE	MODEL SCALE
MACH NO. _____		
DIAMETER DEX ~ IN (@ $X_T = 1941$)	<u>178.5</u>	<u>1.785</u>
DIAMETER DT ~ IN	_____	_____
DIAMETER DIN ~ IN	_____	_____
ON ~ DEGREES	_____	_____
AREA - FT ²		
MAX CROSS-SECTIONAL	<u>173.78</u>	<u>0.01738</u>
GIMBAL ORIGIN	<u>X₀</u>	<u>Y₀</u> <u>Z₀</u>
LEFT NOZZLE ~ IN FS	<u>1738</u>	<u>-243</u> <u>400</u>
RIGHT NOZZLE ~ IN FS	<u>1738</u>	<u>+243</u> <u>400</u>
NULL POSITION	<u>PITCH</u>	<u>YAW</u>
LEFT NOZZLE - DEG.	<u>+8°</u>	<u>+8°</u>
RIGHT NOZZLE - DEG	<u>+8°</u>	<u>+8°</u>

TABLE III. - Continued.

MODEL COMPONENT: RUDDER - R₅

GENERAL DESCRIPTION: Configuration 140A/B Orbiter Rudder.

MODEL SCALE: 0.010

MODEL DRAWING No.: SS-A00148 RELEASE 6

DRAWING NUMBER: VL70-Q00146A

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Area - Ft ²	<u>106.38</u>	<u>.0106</u>
Span (equivalent) - In.	<u>201.0</u>	<u>2.010</u>
Inb'd equivalent chord - In.	<u>91.585</u>	<u>0.916</u>
Outb'd equivalent chord	<u>50.833</u>	<u>0.508</u>
Ratio movable surface chord/ total surface chord		
At Inb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
At Outb'd equiv. chord	<u>0.400</u>	<u>0.400</u>
Sweep Back Angles, degrees		
Leading Edge	<u>34.83</u>	<u>34.83</u>
Tailing Edge	<u>26.25</u>	<u>26.25</u>
Hingeline	<u>34.83</u>	<u>34.83</u>
Area Moment (Normal to hinge line)-Ft ³	<u>526.13</u>	<u>0.0005</u>

TABLE III. - Continued.

MODEL COMPONENT : BOOSTER SOLID ROCKET MOTOR - Sg

GENERAL DESCRIPTION : Booster Solid Rocket, 3 Configuration, Body
of Revolution, Data for (1) of (2) sides, per Rockwell Lines VL77-000036
and VL72-000088

MODEL SCALE: 0.010

DRAWING NUMBER VL72-000088, VL77-000036

DIMENSIONS :	FULL SCALE	MODEL SCALE
Length (Includes Nozzle) - In.	<u>1741.0</u>	<u>17.410</u>
Max Width (Tank Dia.) - In.	<u>142.0</u>	<u>1.420</u>
Max Depth (Aft Shroud) - In.	<u>205.0</u>	<u>2.050</u>
Fineness Ratio	<u>8.49268</u>	<u>8.49268</u>
Area - Ft ²	<u> </u>	<u> </u>
Max. Cross-Sectional	<u>229.21</u>	<u>0.02292</u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>
WP of BSRM Centerline (Z _{TP}) - In.	<u>400.0</u>	<u>4.00</u>
FS of BSRM Nose (X) - In.	<u>200.0</u>	<u>2.00</u>

TABLE III. - Continued.

MODEL COMPONENT: External tank with protuberances, T15GENERAL DESCRIPTION: External oxygen-hydrogen tank; vehicle 3 Configuration
per Rockwell Lines VL78-000041B and VL72-000088B. Model Scale = 0.010DRAWING NUMBER: VL78-000041B
VL72-000088B

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Length - In. (Nose $X_T=309$)	<u>1865</u>	<u>18.65</u>
Max. Width (Dia.)-In.	<u>324</u>	<u>3.24</u>
Max. Depth	<u>-</u>	<u>-</u>
Fineness Ratio	<u>5.756</u>	<u>5.756</u>
Area - FT^2		
Max. Cross-Sectional	<u>572.555</u>	<u>0.057</u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>
WP of Tank Centerline (X_T) In.	<u>400.0</u>	<u>4.000</u>

TABLE III. - Concluded.

MODEL COMPONENT: External Tank without protuberances, T22

GENERAL DESCRIPTION: External Oxygen-Hydrogen Tank, Vehicle 3 configuration,
per Rockwell lines VL78-000041B and VL72-000088B

Model Scale = 0.010

DRAWING NUMBER: VL78-000041B
VL72-000088B

<u>DIMENSIONS:</u>	<u>FULL-SCALE</u>	<u>MODEL SCALE</u>
Length - In. (Nose $X_T=309$)	<u>1865</u>	<u>18.65</u>
Max. Width (Dia.)-In.	<u>324</u>	<u>3.24</u>
Max. Depth	<u>-</u>	<u>-</u>
Fineness Ratio	<u>5.756</u>	<u>5.756</u>
Area - FT ²		
Max. Cross-Sectional	<u>572.555</u>	<u>0.057</u>
Planform	<u> </u>	<u> </u>
Wetted	<u> </u>	<u> </u>
Base	<u> </u>	<u> </u>
WP of Tank Centerline (X_T) In.	<u>400.0</u>	<u>4.000</u>

TABLE III. - Continued.

MODEL COMPONENT: VERTICAL - V₇

GENERAL DESCRIPTION: Centerline vertical tail, double wedge airfoil with rounded leading edge.

NOTE: Same as V5, but with manipulator housing removed.

MODEL SCALE: 0.010

DRAWING NUMBER: VL70-000139

DIMENSIONS:	FULL SCALE	MODEL SCALE
TOTAL DATA		
Area (Theo) - Ft ²		
Planform	<u>425.92</u>	<u>0.04259</u>
Span (Theo) - In.	<u>315.72</u>	<u>3.1572</u>
Aspect Ratio	<u>1.675</u>	<u>1.675</u>
Rate of Taper	<u>0.507</u>	<u>0.507</u>
Taper Ratio	<u>0.404</u>	<u>0.404</u>
Sweep-Back Angles, Degrees.		
Leading Edge	<u>45.000</u>	<u>45.000</u>
Trailing Edge	<u>26.249</u>	<u>26.249</u>
0.25 Element Line	<u>41.130</u>	<u>41.130</u>
Chords:		
Root (Theo) WP	<u>268.50</u>	<u>2.6850</u>
Tip (Theo) WP	<u>108.47</u>	<u>1.0847</u>
MAC	<u>199.81</u>	<u>1.9981</u>
Fus. Sta. of .25 MAC	<u>1463.50</u>	<u>14.635</u>
W.P. of .25 MAC	<u>635.522</u>	<u>6.35522</u>
B.L. of .25 MAC	<u>0.000</u>	<u>0.00</u>
Airfoil Section		
Leading Wedge Angle - Deg.	<u>10.000</u>	<u>10.000</u>
Trailing Wedge Angle - Deg.	<u>14.920</u>	<u>14.920</u>
Leading Edge Radius	<u>2.000</u>	<u>0.020</u>
Void Area - Ft ²	<u>13.17</u>	<u>0.00132</u>
Blanketed Area	<u>0.00</u>	<u>0.00</u>

TABLE III. - Continued.

MODEL COMPONENT: WING-W₁₀₃GENERAL DESCRIPTION: Configuration 3 Orbiter per Lines VL70-000139.NOTE: Same planform as W₀₁, except dihedral at Trailing Edge.MODEL SCALE: 0.010

TEST NO.

DMG. NO. VL70-000139DIMENSIONS:FULL-SCALEMODEL SCALETOTAL DATAArea (Theo.) Ft^2

Planform

2690.00

0.2690

Span (Theo.) In.

936.68

9.3668

Aspect Ratio

2.265

2.265

Rate of Taper

1.177

1.177

Taper Ratio

0.200

0.200

Dihedral Angle, degrees

3.500

3.500

Incidence Angle, degrees

3.000

3.000

Aerodynamic Twist, degrees

+ 3.000

+ 3.000

Sweep Back Angles, degrees

45.000

45.000

Leading Edge

- 10.24

- 10.24

Trailing Edge

35.209

35.209

0.25 Element Line

Chords:

Root (Theo) B.P.O.O.

689.24

6.8924

Tip, (Theo) B.P.

137.85

1.3785

MAC

474.81

4.7481

Fus. Sta. of .25 MAC

1136.89

11.3689

W.P. of .25 MAC

299.20

2.9920

B.L. of .25 MAC

182.13

1.8213

EXPOSED DATAArea (Theo) Ft^2

1752.25

0.1752

Span, (Theo) In. BP108

720.68

7.2068

Aspect Ratio

2.058

2.058

Taper Ratio

0.2451

0.2451

Chords

Root BP108

562.40

5.6240

Tip 1.00 $\frac{b}{2}$

137.85

1.3785

MAC

393.03

3.9303

Fus. Sta. of .25 MAC

1185.31

11.8531

W.P. of .25 MAC

300.20

3.0020

B.L. of .25 MAC

251.76

2.5176

Airfoil Section (Rockwell Mod NASA)

XXXX-64

Root $\frac{b}{2} =$

0.10

0.10

Tip $\frac{b}{2} =$

0.12

0.12

Data for (1) of (2) Sides

Leading Edge Cuff Ft^2

120.33

0.01203

Planform Area

Leading Edge Intersects Fus M. L. @ Sta

560.0

5.600

Leading Edge Intersects Wing @ Sta

1035.0

10.350

TABLE IV. - ORIFICE LOCATIONS.

26-OTS Orbiter

LREF = 1290.3

Pressure Tap Locations
Bottom Centerline

Orifice No.	X/L	X _o (F.S.)
1	0	238.00
2	.005	244.452
3	.020	263.806
4	.040	289.612
5	.060	315.418
6	.080	341.224
7	.100	367.030
8	.150	431.545
9	.200	496.060
10	.300	625.090
11	.400	754.120
12	.500	883.150
13	.600	1012.180
14	.800	1270.240
15	.950	1463.785
16	.975	1496.043
17	1.000	1528.300
18	1.025	1560.558
19	1.050	1592.815

Top Centerline

Orifice No.	X/L	X _o (F.S.)
20	.050	302.515
21	.100	367.030
22	.125	399.288
23	.150	431.545
24	.160	444.448
25	.170	457.351
26	.180	470.254
27	.200	496.060
28	.300	625.090
29	.600	1012.180

Bottom Surface
B.P = -50" (F.S.)

Orifice No.	X/L	X _o
33	.20	496.060
34	.30	625.090

Windshield Left Side

30	Center of forward window
31	Center of oblique window
32	Center of aft window

Cross Sections (Left Side)

Orifice No.	X/L	X _o (F.S.)	
35	.10	367.030	Ø = 10°
36			Ø = 20°
37			CCL Tangent
38			HHB Tangent
39	.2	496.060	CCL Tangent
40			Ø = 35°
41			Ø = 40°
42			Ø = 50° (Z=320)
43			Ø=96.3 (Z=410)
44	.30	625.090	Ø=33.1 (V _o =75)
45			Ø = 40
46			Ø = 45
47			Ø = 57 (Z=330)
48			Ø=60.9 (Z=340)
49			Ø=65 (Z=350)
50			Ø=69 (Z=360)
51			Ø=95.7 (Z=410)
52			Ø = 135
53	.60	1012.180	Ø=79.3 (Z=380)
54			Ø=95.5 (Z=410)
55			Ø=103 (Z=425)
56			Ø=112.6 (Z=440)
57			Ø=135
58	.80	1270.24	Ø=95.5 (Z=410)
59	.975	1496.043	Ø=51.6 (Z=300)
60			Ø=68.0 (Z=350)

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TABLE IV. - Continued.

26-OTS Orbiter - Continued
0.010-Scale

OMS Pods (Left Side)

<u>Orifice No.</u>	<u>X/L</u>	<u>X_oFULL</u>	<u>Y_oFULL</u>	<u>Z_oFULL</u>	<u>θ°</u>
61	.780	1245	-95	474	127.9
62	.805	1276	-105.5	488	129.5
63	.829	1307	-117.0	498.7	130
64	.862	1350	-126.5	506	130
65	.963	1480	-134.5	513	130
66	.829	1307	-95.0	511	139.6
67	.963	1480	-95.0	530	144
68	.829	1307	-124.5	474	120.8
69	.963	1480	-142.5	474	117.5
70	1.000	1528.3	-142.5	474	117.5
71	1.0145	1547	Bottom of RCS		

Left Wing Bottom Surface

<u>b/2</u>	<u>Orifice No.</u>	<u>X/L</u>	<u>X/C</u>	<u>X_oFULL</u>
.25	72	.40	.153	754.120
Y _o =117.085	73	.50	.299	883.150
C=886.0	74	.60	.444	1012.180
X _o LE=618.5	75	.80	.736	1270.240
.40	76	.592	.025	1002.063
Y _o =187.336	77	.600	.045	1012.180
C=502.5	78	.660	.200	1090.000
X _o LE=989.5	79	.700	.302	1141.210
	80	.80	.559	1270.240
	81	.933	.900	1441.750
.50	82	.651	.025	1077.913
Y _o =234.170	83	.700	.177	1141.210
C=416.5	84	.800	.487	1270.240
X _o LE=1067.5				
.60	85	.708	.100	1152.000
Y _o =281.004	86	.800	.428	1270.240
C=360.0	87	.845	.600	1332.000
X _o LE=1116.0	88	.876	.700	1368.000
	89	.904	.800	1404.000
	90	.918	.850	1422.000
	91	.932	.900	1440.000

TABLE IV. - Continued.

26-OTS Orbiter - Continued
0.010-Scale

Left Wing Bottom Surface - Continued

<u>b/2</u>	<u>Orifice No.</u>	<u>X/L</u>	<u>X/C</u>	<u>X_oFULL</u>
.75				
$V_o=351.255$	92	.740	.025	1193.425
$C=277.0$	93	.800	.302	1270.240
$X_{oLE}=1186.5$	94	.928	.900	1435.800
.85	95	.788	.100	1255.2
$V_o=398.089$				
$C=222.0$				
$X_{oLE}=1233.0$				
.95	96	.826	.10	1303.850
$V_o=444.923$	97	.924	.90	1430.650
$C=158.5$				
$X_{oLE}=1288.0$				
.99.8	98	.90	0-LE	1398.95

Leading Edge (Left Wing)
Rolled Down 30°

<u>b/2</u>	<u>Orifice No.</u>	<u>X/L</u>	<u>X_o</u>
.36106	99	.40	LE Rolled 30° Down
.34863	100	.50	LE Rolled 30° Down
.50	101	.643	LE Rolled 30° Down
.60	102 to 107	Group A - See Sketch	
.75	108		LE Rolled 30° Down
.85	109 to 114	Group B - See Sketch	

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TABLE IV. - Continued.

26-OTS Orbiter - Continued
0.010-Scale

Right Wing Top Surface

<u>b/2</u>	<u>Orifice No.</u>	<u>X/L</u>	<u>X/C</u>	<u>X_oFULL</u>
.40	115	.602	.05	1014.625
$Y_o=187.336$	116	.660	.20	1090.000
$C=502.5$	117	.816	.60	1291.000
$X_oLE=989.5$				
.60	118	.736	.20	1188.000
$Y_o=281.004$	119	.848	.60	1332.000
$C=360.0$	120	.904	.80	1404.000
$X_oLE=1116.0$	121	.932	.90	1440.000
	122	.946	.95	1458.000
.80	123	.782	.20	1246.960
$Y_o=374.672$	124	.884	.90	1378.070
$C=187.3$				
$X_oLE=1209.5$				

Vertical Tail (Left Side)

<u>Orifice No.</u>	<u>Z/bv</u>	<u>Z_o</u>	<u>X_o</u>	<u>X/C</u>
125	.299	594.34	L.E.	0
126	.299	594.34	1438.2	.30
127	.299	594.34	1570.5	.90
128	.532	667.9	L.E.	0
129	.532	667.9	1500.8	.30
130	.532	667.9	1537.0	.50
131	.532	667.9	1585.5	.70
132	.532	667.9	1611.0	.90
133	.765	741.49	L.E.	0
134	.765	741.49	1563.8	.30
135	.765	741.49	1651.2	.90
136	.905	785.6	L.E.	0

TABLE IV. - Continued.

26-OTS

External Tank - 0.010-Scale
 LT = 2174-309 = 1865 F.S. = 18.650 M.S.

Orifice No.	X/L	θ	X _{FS}	X _{MS}
501	.04	0°	74.60	0.746
502	.08	0°	149.20	1.492
503	.15	0°	279.75	2.7975
504	.40	0°	746.00	7.460
505	.60	0°	1119.00	11.190
506	.80	0°	1492.00	14.920
507	.40	45°	746.00	7.460
508	.60	45°	1119.00	11.190
509	.80	45°	1492.00	14.920
510	.90	45°	1678.50	16.785
511	.30	67.5°	559.50	5.595
512	.35	67.5°	652.75	6.5275
513	.40	67.5°	746.00	7.460
514	.50	67.5°	932.50	9.320
515	.60	67.5°	1119.00	11.190
516	.65	67.5°	1212.25	12.1225
517	.70	67.5°	1305.50	13.055
518	.75	67.5°	1398.75	13.9875
519	.80	67.5°	1492.00	14.920
520	.90	67.5°	1678.50	16.785
521	.20	90°	373.00	3.730
522	.25	90°	466.25	4.6625
523	.275	90°	512.875	5.12875
524	.30	90°	559.50	5.5950
525	.325	90°	606.125	6.06125
526	.35	90°	652.75	6.5275
527	.40	90°	746.00	7.460
528	.45	90°	839.25	8.3925
529	.50	90°	932.50	9.3250
530	.55	90°	1025.75	10.2575
531	.60	90°	1119.00	11.190
532	.65	90°	1212.25	12.1225
533	.70	90°	1305.50	13.0550
534	.75	90°	1398.75	13.9875
535	.80	90°	1492.00	14.9200
536	.85	90°	1585.25	15.8525
537	.90	90°	1678.50	16.7850
538	.275	112.5°	512.875	5.12875
539	.30	112.5°	559.50	5.5950
540	.325	112.5°	606.125	6.06125
541	.35	112.5°	652.75	6.5275
542	.40	112.5°	746.00	7.460
543	.45	112.5°	839.25	8.3925
544	.50	112.5°	932.50	9.3250

TABLE IV. - Continued.

26-OTS - Continued

Orifice No.	X/L	θ	XES	XMS
545	.55	112.5°	1025.75	10.2575
546	.60	112.5°	1119.00	11.1900
547	.65	112.5°	1212.25	12.1225
548	.70	112.5°	1305.50	13.0550
549	.75	112.5°	1398.75	13.9875
550	.80	112.5°	1492.00	14.9200
551	.85	112.5°	1585.25	15.8525
552	.90	112.5°	1678.50	16.7850
553	.825	123°	1538.625	15.38625
554	.85	123°	1585.25	15.8525
555	.875	123°	1631.875	16.31875
556	.90	123°	1678.50	16.7850
557	.925	123°	1725.125	17.25125
558	.96	123°	1790.40	17.9040
559	.325	135°	606.125	6.06125
560	.35	135°	652.75	6.5275
561	.375	135°	699.375	6.99375
562	.40	135°	746.00	7.4600
563	.45	135°	839.25	8.3925
564	.50	135°	932.50	9.3250
565	.55	135°	1025.75	10.2575
566	.60	135°	1119.00	11.1900
567	.65	135°	1212.25	12.1225
568	.70	135°	1305.50	13.0550
569	.75	135°	1398.75	13.9875
570	.80	135°	1492.00	14.9200
571	.85	135°	1585.25	15.8525
572	.90	135°	1678.50	16.7850
573	.935	151°	1743.775	17.43775
574	.40	157.5°	746.00	7.4600
575	.425	157.5°	792.625	7.92625
576	.45	157.5°	839.25	8.3925
577	.475	157.5°	885.875	8.85875
578	.50	157.5°	932.50	9.3250
579	.55	157.5°	1025.75	10.2575
580	.60	157.5°	1119.00	11.1900
581	.65	157.5°	1212.25	12.1225
582	.70	157.5°	1305.50	13.0550
583	.75	157.5°	1398.75	13.9875
584	.80	157.5°	1492.00	14.9200
585	.85	157.5°	1585.25	15.8525
586	.90	157.5°	1678.50	16.7850
587	.425	161°	792.625	7.92625
588	.50	166°	932.50	9.3250
589	.70	166°	1305.50	13.0550
590	.90	166°	1678.50	16.7850

TABLE IV. - Continued.

26-QTS - Continued

Orifice No.	X/L	θ	XFS	XLS
591	.40	167°	746.00	7.4600
592	0.00	180°	0.00	0.00
593	.005	180°	9.325	0.09325
594	.01	180°	18.65	0.1865
595	.04	180°	74.60	0.7460
596	.08	180°	149.20	1.4920
597	.15	180°	279.75	2.7975
598	.20	180°	373.00	3.730
599	.25	180°	466.25	4.6625
600	.30	180°	559.50	5.5950
601	.35	180°	652.75	6.5275
602	.375	180°	699.375	6.99375
603	.40	180°	746.00	7.460
604	.425	180°	792.625	7.92625
605	.45	180°	839.25	8.3925
606	.475	180°	885.875	8.85875
607	.50	180°	932.50	9.3250
608	.525	180°	979.125	9.79125
609	.55	180°	1025.75	10.2575
610	.575	180°	1072.375	10.72375
611	.60	180°	1119.00	11.1900
612	.65	180°	1212.25	12.1225
613	.70	180°	1305.50	13.0550
614	.75	180°	1398.75	13.9875
615	.80	180°	1492.00	14.920
616	.85	180°	1585.25	15.8525
617	.90	180°	1678.50	16.7850
618	.937	180°	1747.505	17.47505
619	.975	180°	1818.375	18.18375
620	.08	197°	149.20	1.4920
621	.15	197°	279.75	2.7975
622	.30	197°	559.50	5.5950
623	.50	197°	932.50	9.3250
624	.70	197°	1305.50	13.0550
625	.90	197°	1678.50	16.7850
626	.15	210°	279.75	2.7975
627	.40	210°	746.00	7.4600
628	.60	210°	1119.00	11.1900
629	.80	210°	1492.00	14.9200
630	.937	210°	1747.505	17.47505
631	.40	220°	746.00	7.4600
632	.50	220°	932.50	9.3250
633	.70	220°	1305.50	13.0550
634	.335	225°	624.775	6.24775
635	.40	232°	746.00	7.4600
636	.60	232°	1119.00	11.1900
637	.80	232°	1492.00	14.9200

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TABLE IV. - Concluded.

26-OTS Solid Rocket Motor
0.010-Scale

Orifice No.	X/L	ψ°	$X_s(\text{FULL})$	Orifice No.	X/L	ψ°	$X_s(\text{FULL})$
701	.00	90	200.000	735	.900	225	1708.400
702	.025	90	241.900	736	.930	225	1758.680
703	.050	90	283.800	737	.960	225	1808.960
704	.100	90	367.600	738	.990	225	1859.240
705	.400	90	870.400	739	.930	240	1758.680
706	.700	90	1373.200	740	.960	240	1808.960
707	.780	90	1498.0	741	.990	240	1859.240
708	.800	90	1540.800	742	.300	247.5	702.800
709	.930	90	1758.680	743	.400	247.5	870.400
710	.990	90	1859.240	744	.500	247.5	1038.000
711	.050	180	283.800	745	.600	247.5	1205.600
712	.100	180	367.600	746	.700	247.5	1373.200
713	.200	180	535.200	747	.115	260	392.740
714	.400	180	870.400	748		270	(45° RL from nose radius)
715	.600	180	1205.600	749	.025	270	241.900
716	.700	180	1373.200	750	.050	270	283.800
717	.780	180	1498.0	751	.075	270	325.700
718	.800	180	1540.800	752	.100	270	367.600
719	.900	180	1708.400	753	.110	270	384.360
720	.930	180	1758.680	754	.130	270	417.880
721	.960	180	1808.960	755	.150	270	451.400
722	.990	180	1859.240	756	.200	270	535.200
723	.910	210	1725.160	757	.300	270	702.800
724	.920	210	1741.920	758	.400	270	870.400
725	.930	210	1758.680	759	.500	270	1038.000
726	.950	210	1764.440	760	.600	270	1205.600
727	.925	215	1736.42	761	.700	270	1373.200
728	.940	215	1775.440	762	.780	270	1498.0
729	.960	215	1808.960	763	.800	270	1540.800
730	.150	225	451.400	764	.900	270	1708.400
731	.400	225	870.400	765	.930	270	1758.680
732	.600	225	1205.600	766	.990	270	1859.240
733	.780	225	1498.0	767	.300	315	702.800
734	.800	225	1540.800	768	.700	315	1373.200

Skirt
Diagram

TABLE V.

ORIFICE VS VALVE-PORT

Orifice	Valve	Port	Orifice	Valve	Port	Orifice	Valve	Port
1	12	4	41	10	17	81	2	10
2	12	5	42	10	18	82	10	28
3	12	6	43	4	4	83	6	33
4	12	7	44	10	19	84	6	8
5	12	8	45	10	20	85	8	9
6	10	4	46	10	21	86	6	9
7	10	5	47	4	5	87	6	10
8	10	6	48	4	6	88	2	11
9	10	7	49	4	7	89	2	12
10	10	8	50	4	8	90	2	13
11	6	28	51	4	9	91	2	14
12	6	4	52	4	10	92	10	29
13	6	5	53	4	11	93	6	34
14	2	4	54	4	12	94	2	15
15	2	5	55	4	13	95	10	30
16	2	6	56	4	14	96	10	31
17	2	7	57	4	15	97	4	24
18	2	8	58	4	16	98	10	32
19	2	9	59	4	17	99	10	33
20	7	4	60	4	18	100	10	34
21	7	5	61	7	7	101	10	35
22	7	6	62	7	8	102	12	9
23	8	10	63	7	9	103	10	22
24	8	11	64	7	10	104	10	23
25	8	12	65	4	19	105	12	10
26	8	13	66	7	11	106	12	11
27	8	14	67	4	20	107	10	24
28	1	4	68	7	12	108	12	12
29	1	5	69	4	21	109	12	13
30	8	15	70	4	22	110	6	35
31	8	16	71	4	23	111	6	36
32	8	17	72	10	25	112	12	14
33	10	9	73	6	29	113	10	36
34	10	10	74	6	30	114	6	37
35	10	11	75	6	6	115	8	18
36	10	12	76	10	26	116	1	6
37	10	13	77	10	27	117	1	7
38	10	14	78	6	31	118	1	8
39	10	15	79	6	32	119	1	9
40	10	16	80	6	7	120	1	10

TABLE V₆ - Continued.

ORIFICE VS VALVE-PORT

Orifice	Valve	Port	Orifice	Valve	Port	Orifice	Valve	Port
121	P L U G G E D		521	1	23	561	9	27
122	1	12	522	9	8	562	9	28
123	1	13	523	9	9	563	9	29
124	1	14	524	9	10	564	9	30
125	12	15	525	9	11	565	9	31
126	2	16	526	9	12	566	3	30
127	2	17	527	9	13	567	3	31
128	12	16	528	9	14	568	3	32
129	2	18	529	9	15	569	3	33
130	2	19	530	9	16	570	3	34
131	2	20	531	3	10	571	3	35
132	2	21	532	P L U G G E D		572	3	36
133	12	17	533	3	12	573	5	4
134	2	22	534	3	13	574	11	4
135	2	23	535	3	14	575	11	5
136	12	18	536	3	15	576	11	6
			537	3	16	577	11	7
			538	9	17	578	11	8
			539	9	18	579	11	9
			540	9	19	580	5	5
501	7	13	541	9	20	581	5	6
502	7	14	542	9	21	582	5	7
503	1	15	543	9	22	583	5	8
504	1	16	544	9	23	584	5	9
505	1	17	545	9	24	585	5	10
506	1	18	546	3	17	586	5	11
507	1	19	547	3	18	587	11	10
508	1	20	548	3	19	588	11	11
509	1	21	549	3	20	589	5	12
510	1	22	550	3	21	590	P L U G G E D	
511	9	4	551	3	22	591	11	12
512	9	5	552	3	23	592	12	19
513	9	6	553	P L U G G E D		593	12	20
514	9	7	554	3	25	594	12	21
515	3	4	555	3	26	595	7	15
516	3	5	556	3	27	596	7	16
517	3	6	557	3	28	597	3	37
518	3	7	558	P L U G G E D		598	3	38
519	3	8	559	9	25	599	11	13
520	3	9	560	9	26	600	11	14

TABLE V - Concluded.

ORIFICE VS VALVE-PORT

Orifice	Valve	Port	Orifice	Valve	Port	Orifice	Valve	Port
601	11	15	701	12	22	741	7	23
602	11	16	702	5	37	742	6	16
603	11	17	703	5	32	743	6	17
604	11	18	704	5	33	744	6	18
605	11	19	705	1	24	745	6	19
606	11	20	706	1	25	746	6	20
607	11	21	707	12	23	747	12	30
608	11	22	708	12	24	748	12	31
609	11	23	709	7	18	749	11	34
610	11	24	710	7	19	750	11	35
611	5	14	711	11	32	751	11	36
612	5	15	712	11	33	752	12	32
613	5	16	713	9	32	753	12	33
614	5	17	714	6	11	754	12	34
615	5	18	715	P L U G G E D			12	35
616	5	19	716	6	13	756	9	33
617	5	20	717	12	25	757	6	21
618	5	21	718	12	26	758	6	22
619	5	22	719	7	20	759	6	23
620	7	17	720	8	4	760	6	24
621	3	39	721	8	5	761	6	25
622	11	25	722	7	21	762	12	36
623	11	26	723	8	19	763	12	37
624	5	23	724	8	20	764	7	24
625	5	24	725	8	21	765	7	25
626	3	40	726	8	22	766	O P E N	
627	11	27	727	8	23	767	6	26
628	5	25	728	8	24	768	6	27
629	5	26	729	8	25			
630	5	27	730	12	27			
631	11	28	731	6	14			
632	11	29	732	6	15			
633	5	28	733	12	28			
634	11	30	734	12	29			
635	11	31	735	7	22			
636	5	29	736	8	26			
637	5	30	737	8	27			
			738	O P E N				
			739	8	7			
			740	8	8			

TABLE VI
VALVE-PORT VS ORIFICE NUMBER

PORT	VALVE					
	1	2	3	4	5	6
4	28	14	515	43	573	12
5	29	15	516	47	580	13
6	116	16	517	48	581	75
7	117	17	518	49	582	80
8	118	18	519	50	583	84
9	119	19	520	51	584	86
10	120	81	531	52	585	87
11		88		53	586	714
12	122	89	533	54	589	
13	123	90	534	55		716
14	124	91	535	56	611	731
15	503	94	536	57	612	732
16	504	126	537	58	613	742
17	505	127	546	59	614	743
18	506	129	547	60	615	744
19	507	130	548	65	616	745
20	508	131	549	67	617	746
21	509	132	550	69	618	757
22	510	134	551	70	619	758
23	521	135	552	71	624	759
24	705			97	625	760
25	706		554		628	761
26			555		629	767
27			556		630	768
28			557		633	11
29					636	73
30			566		637	74
31			567			78
32			568		703	79
33			569		704	83
34			570			93
35			571			110
36			572			111
37			597		702	114
38			598			
39			621			
40			626			

TABLE VI. - Concluded.
VALVE-PORT VS ORIFICE NUMBER

PORT	VALVE					
	7	8	9	10	11	12
4	20	720	511	6	574	1
5	21	721	512	7	575	2
6	22		513	8	576	3
7	61	739	514	9	577	4
8	62	740	522	10	578	5
9	63	85	523	33	579	102
10	64	23	524	34	587	105
11	66	24	525	35	588	106
12	68	25	526	36	591	108
13	501	26	527	37	599	109
14	502	27	528	38	600	112
15	595	30	529	39	601	125
16	596	31	530	40	602	128
17	620	32	538	41	603	133
18	709	115	539	42	604	136
19	710	723	540	44	605	592
20	719	724	541	45	606	593
21	722	725	542	46	607	594
22	735	726	543	103	608	701
23	741	727	544	104	609	707
24	764	728	545	107	610	708
25	765	729	559	72	622	717
26		736	560	76	623	718
27		737	561	77	627	730
28			562	82	631	733
29			563	92	632	734
30			564	95	634	747
31			565	96	635	748
32			713	98	711	752
33			756	99	712	753
34				100	749	754
35				101	750	755
36				113	751	762
37						763
38						
39						
40						

TABLE VII. - S-V CONFIGURATION VS TRANSDUCER

TRANSDUCER LOCATION

TRANSDUCER	RATED LOAD-PSIA
A	5
B	5
C	5
D	5
E	5
F	10
G	10
H	10
I	15
J	15
K	15
L	15

CONFIGURATION VS TRANSDUCER

CONFIG.	VALVE											
	1	2	3	4	5	6	7	8	9	10	11	12
I.V.	A	B	C	D	E	F	G	H	I	J	K	L
ORB.	A	B	*F	D	*E	C	G	H	*I	J	*K	L
TANK	A	*I	C	*K	E	*F	G	*H	B	*J	D	L
SRB	A	*I	*F	*K	E	C	G	H	B	*J	D	L

*Not used for this configuration

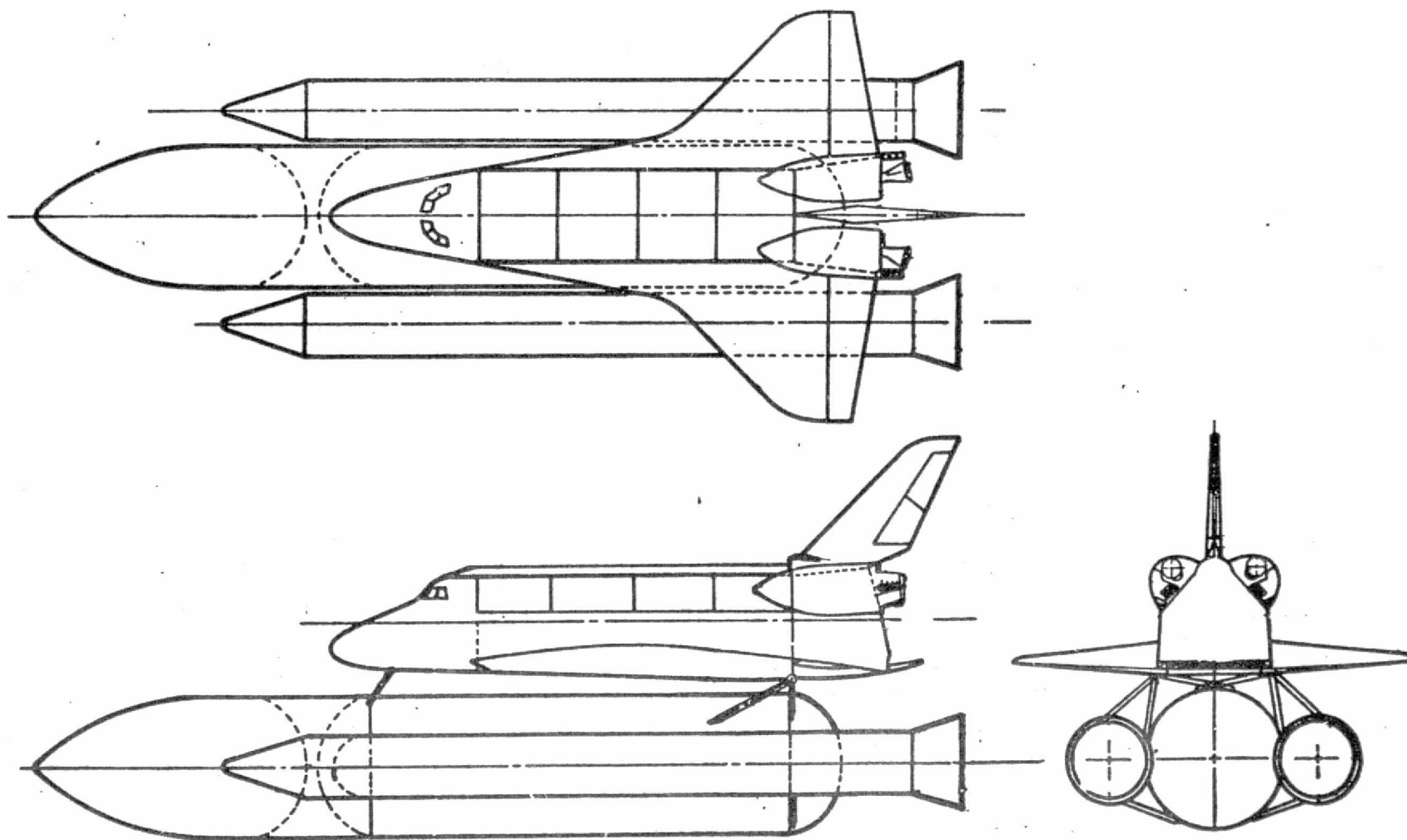
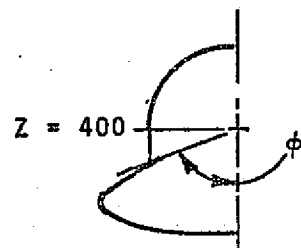
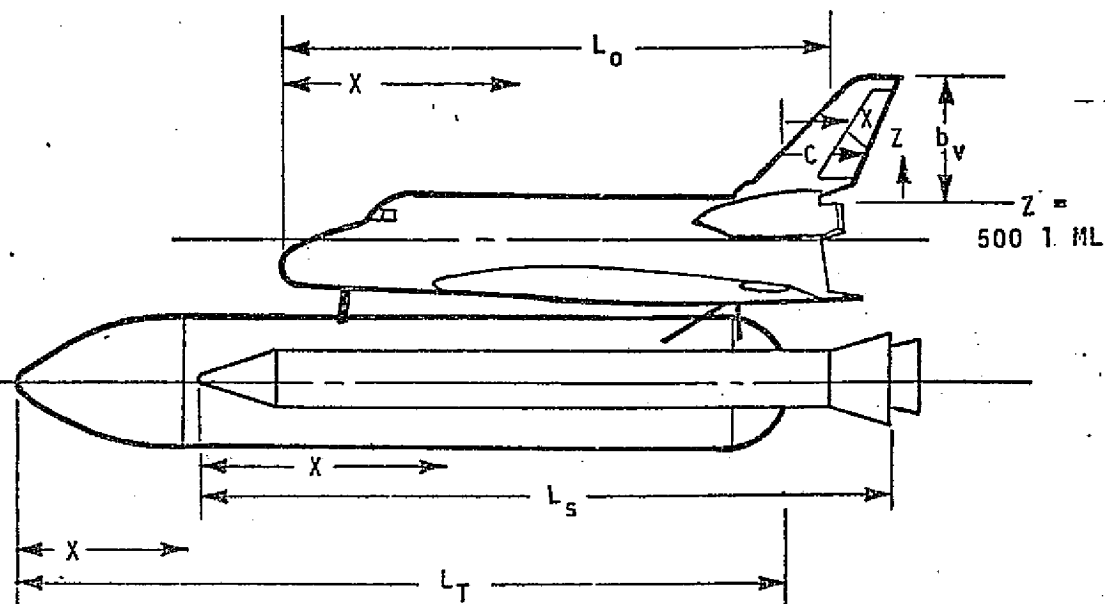
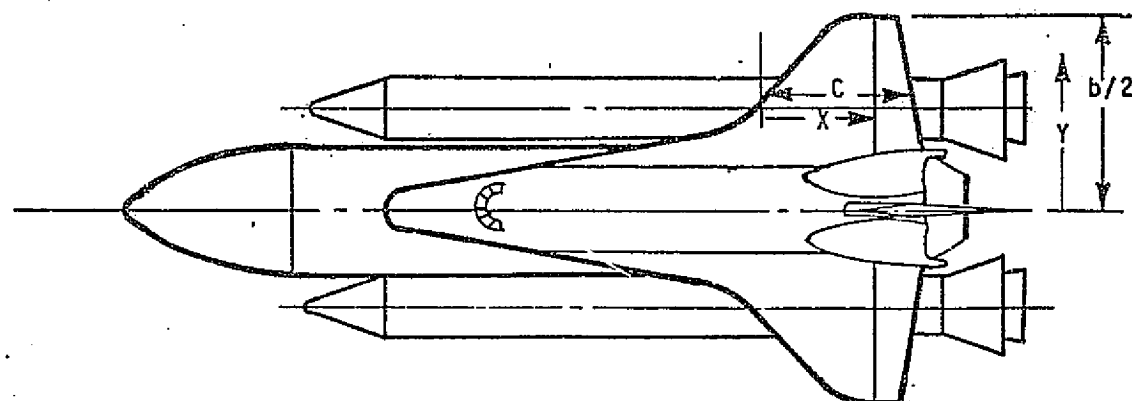
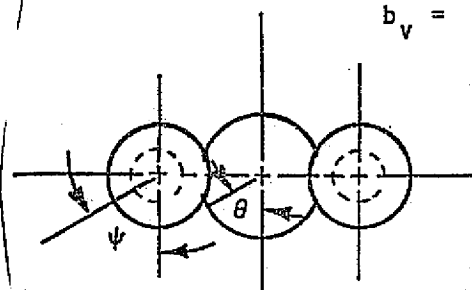


Figure 1. - Integrated Vehicle General Arrangement.



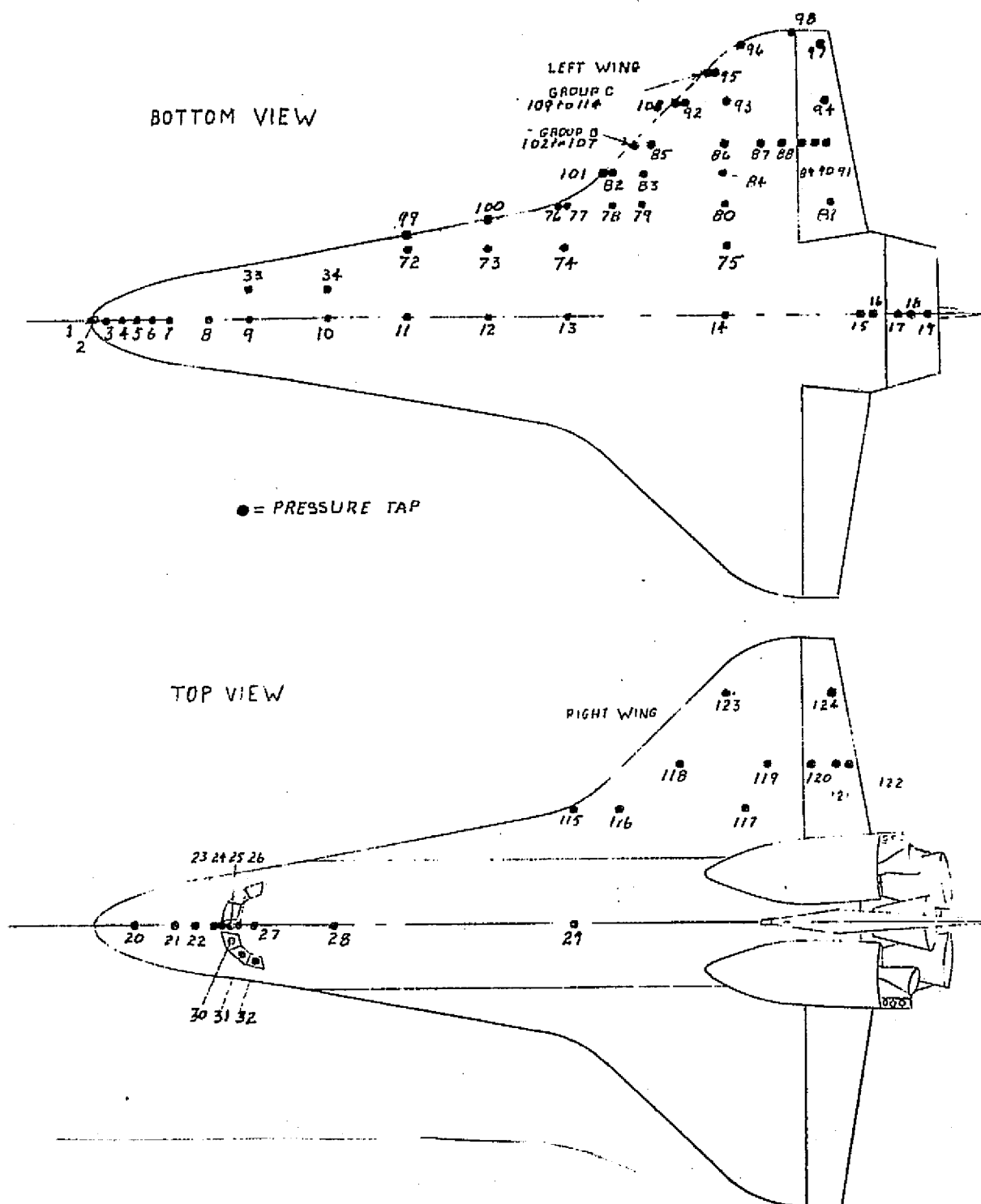
VIEW LOOKING FORWARD ψ ,
 θ AND ϕ MEASURED FROM
 BOTTOM ϕ CLOCKWISE

$L_0 = 1290.3$
 $L_T = 1865.0$
 $L_S = 1676.0$
 $b/2 = 468.34$
 $b_v = 315.72$

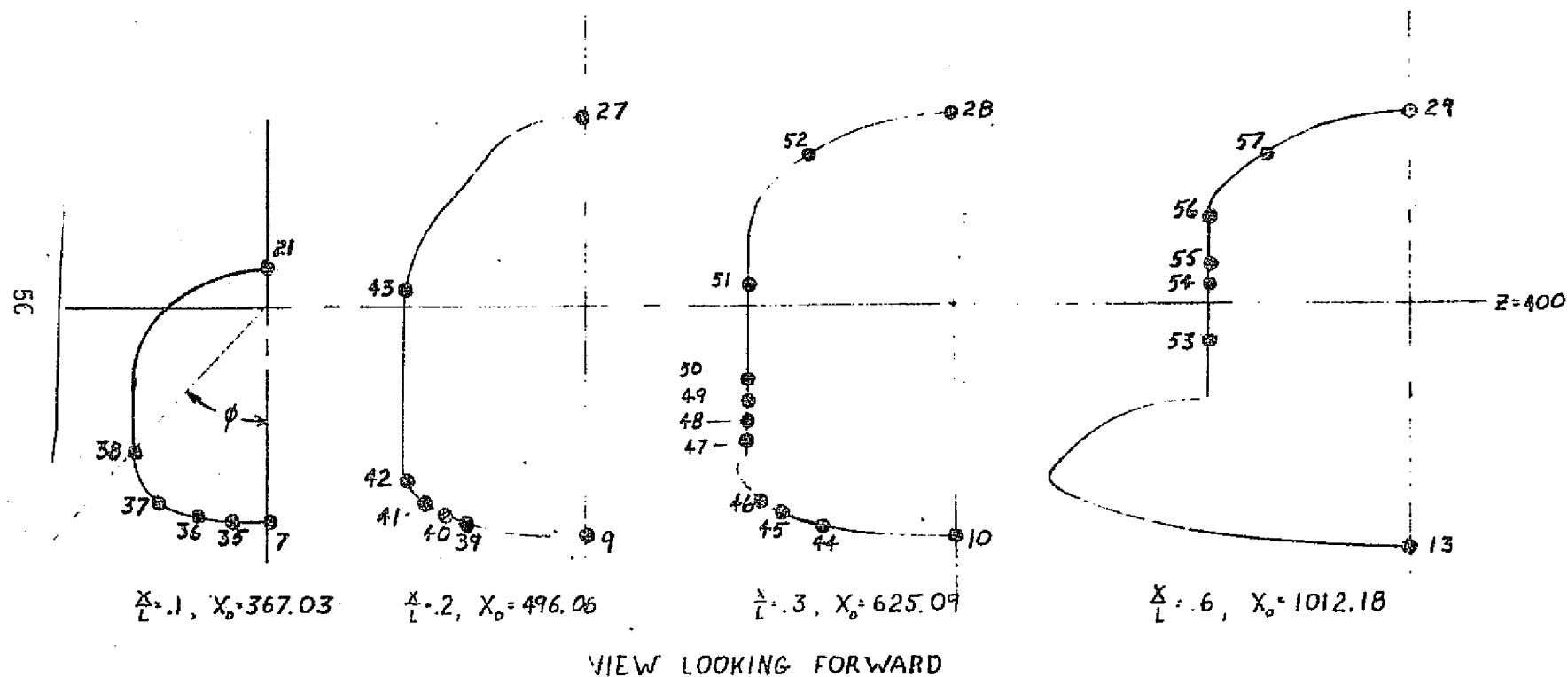


a. Instrumentation Location

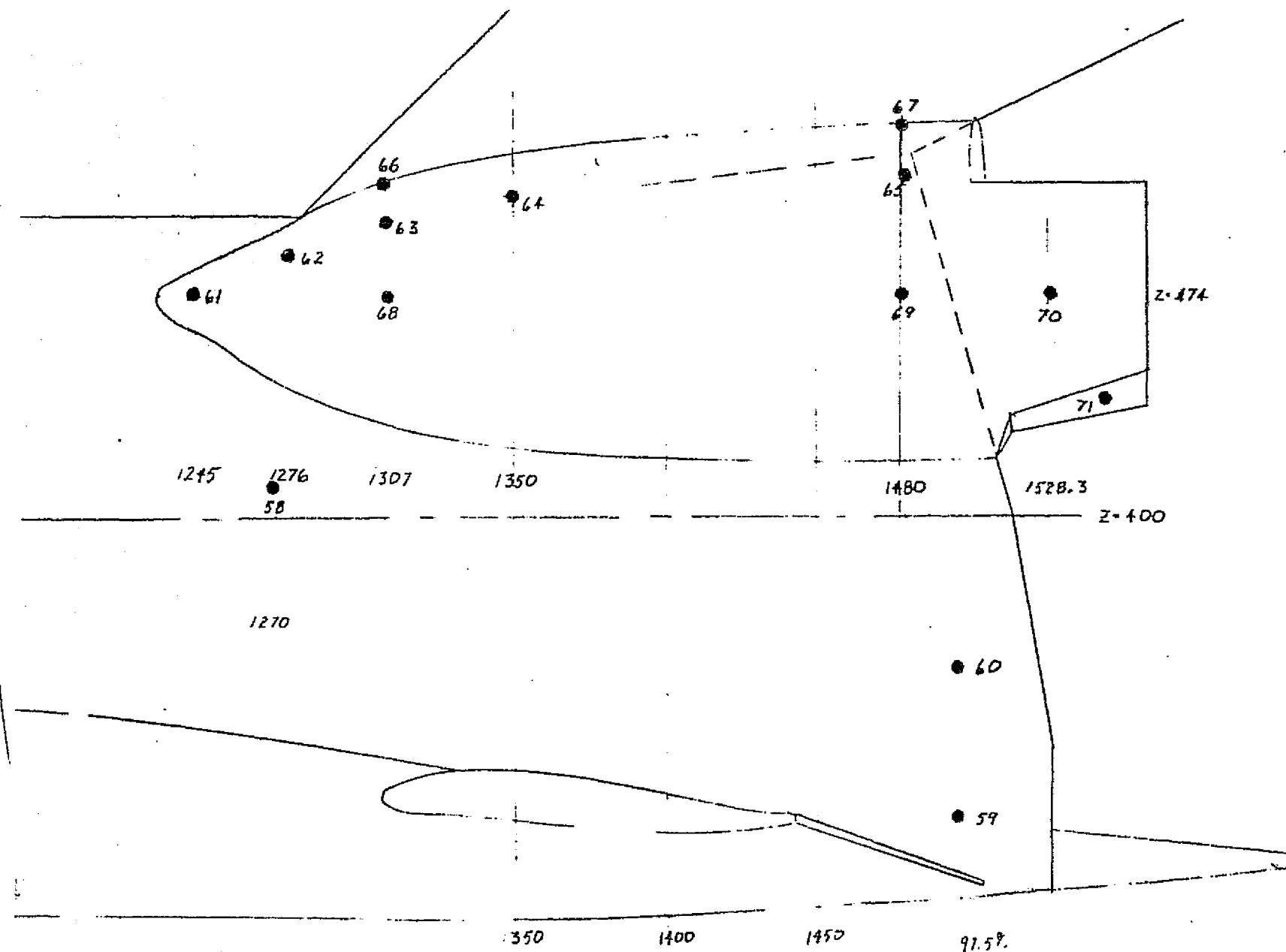
Figure 2. - Model sketches.



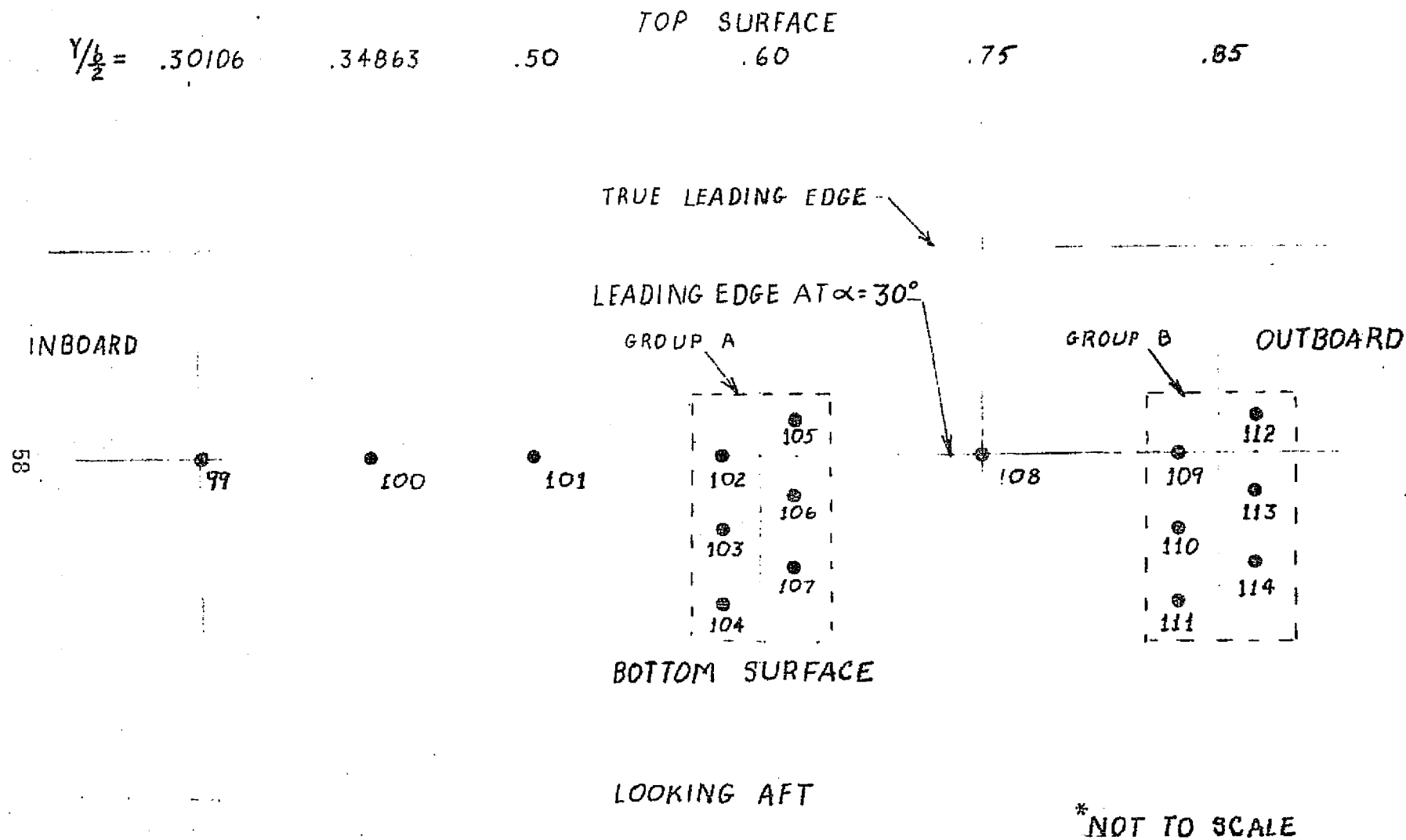
b. 26-OTS Orbiter
Figure 2. - Continued.



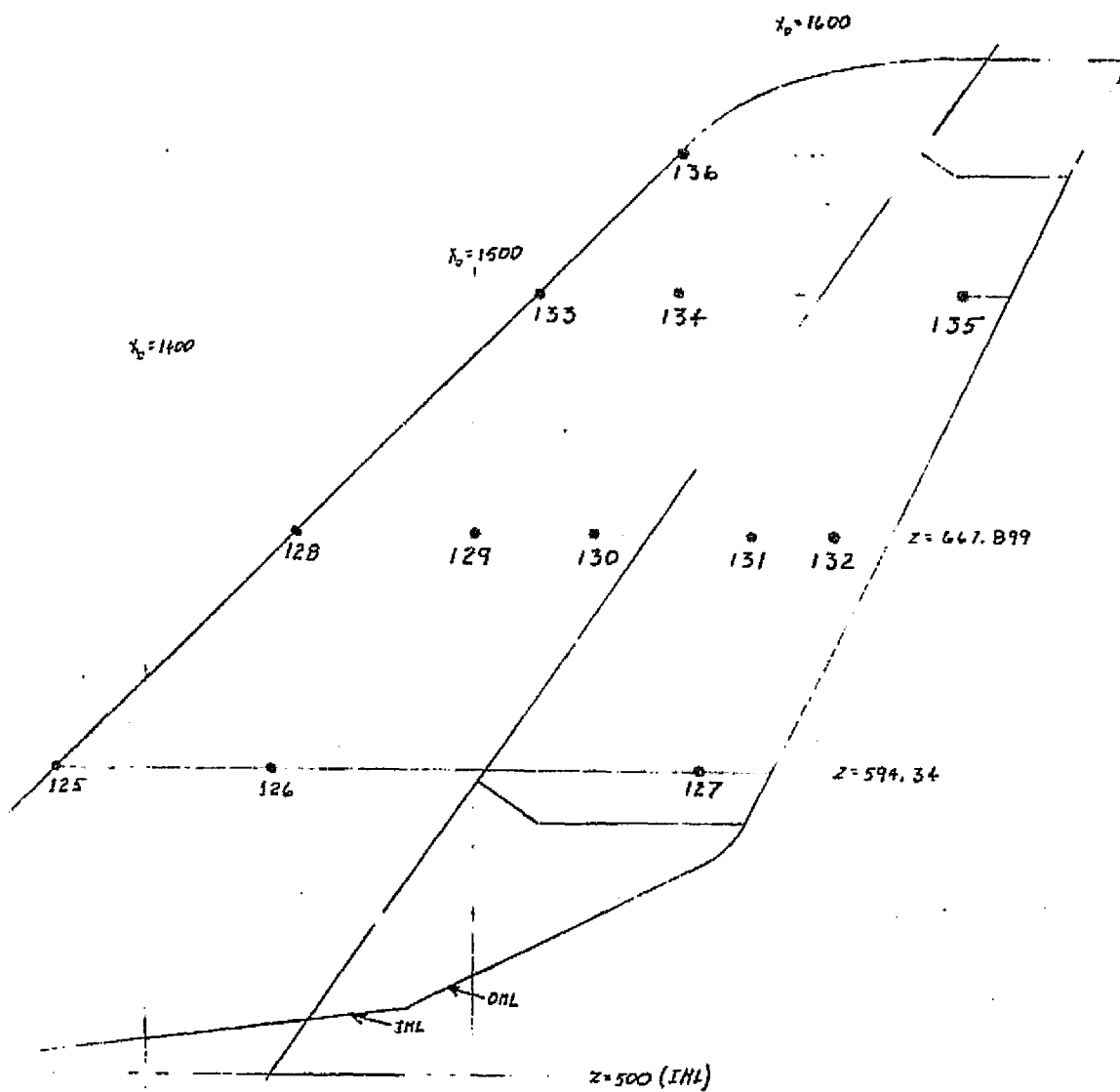
c. 26-OTS Orbiter Fuselage Cross-Section
Figure 2. - Continued.



d. 26-OTS Orbiter OMS Pods
Figure 2. - Continued.

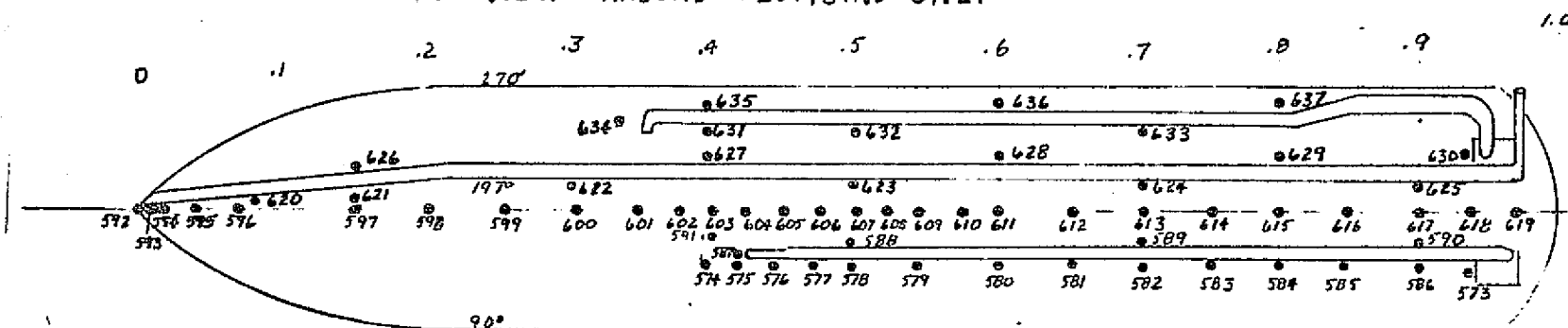


e. Left Wing Leading Edge
 Figure 2. - Continued.

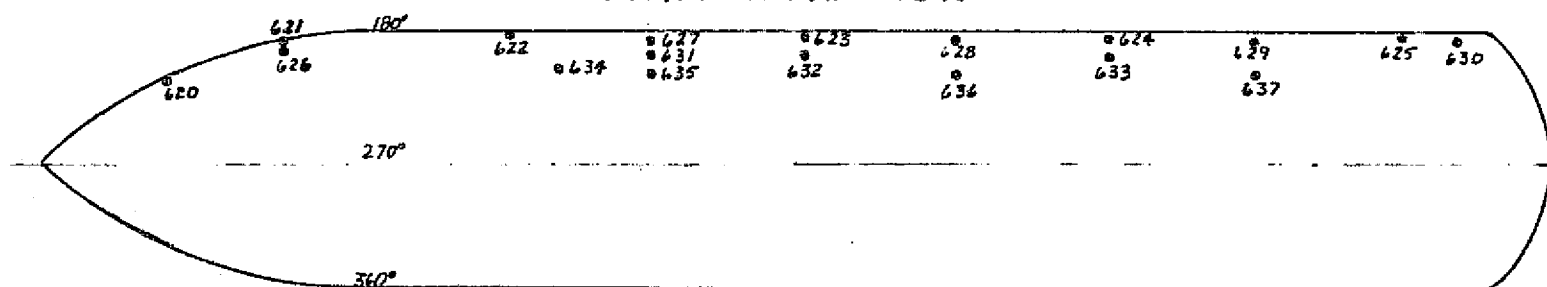


f. 26-OTS Vertical Tail
Figure 2. - Continued.

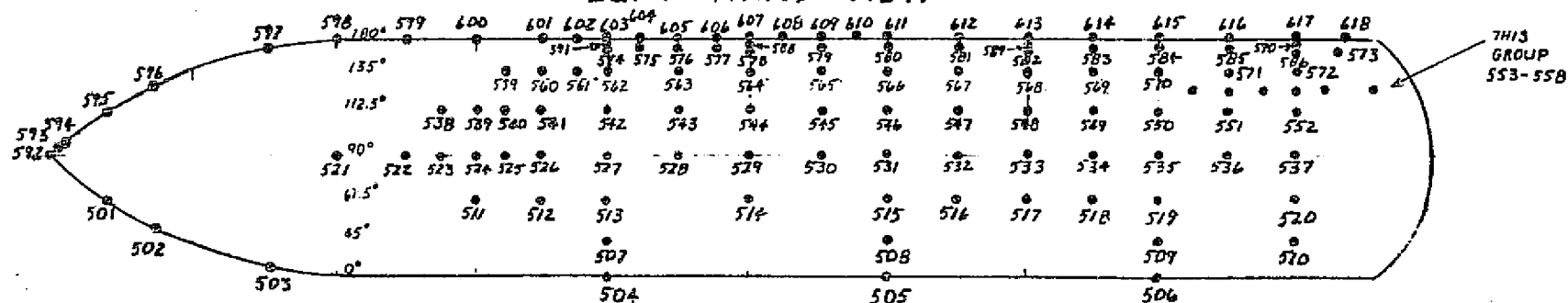
TOP VIEW ~ AROUND PLUMBING ONLY



RIGHT HAND VIEW



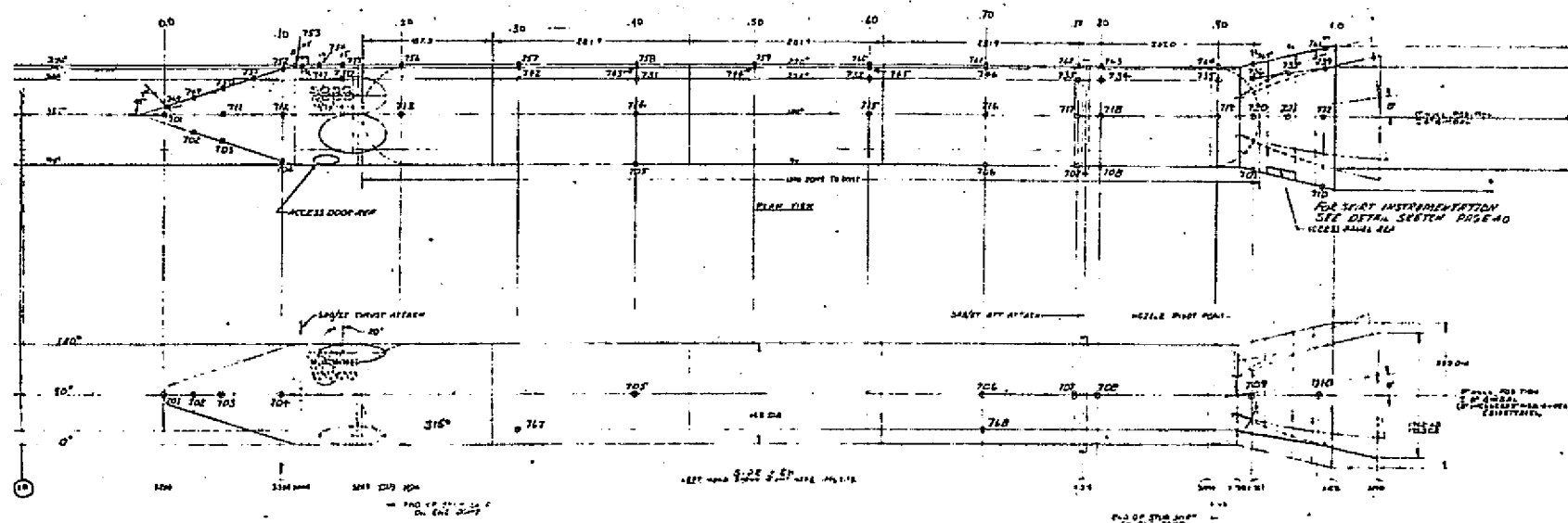
LEFT HAND VIEW



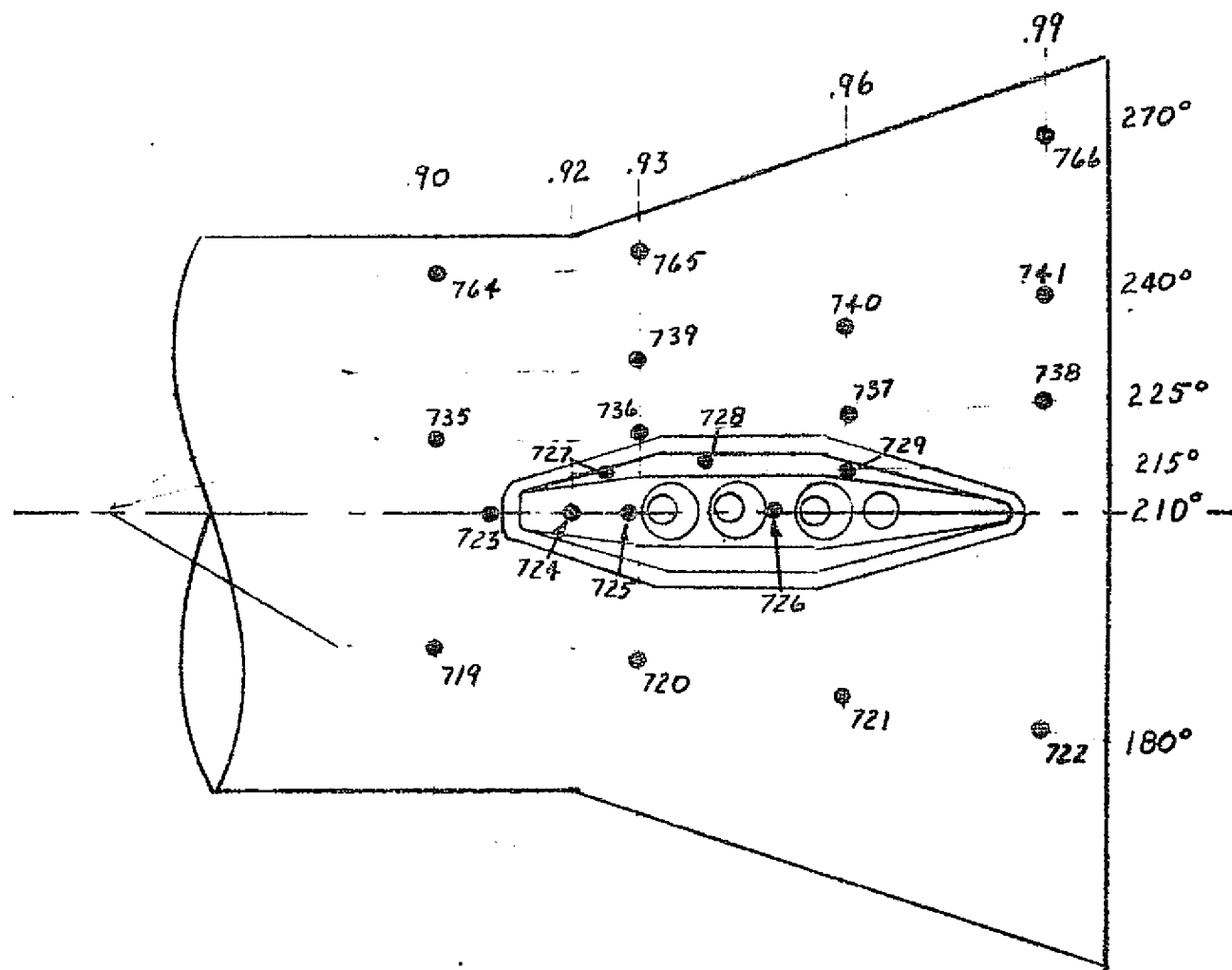
g. 26-OTS ET Pressure Tap Locations
Figure 2. - Continued.

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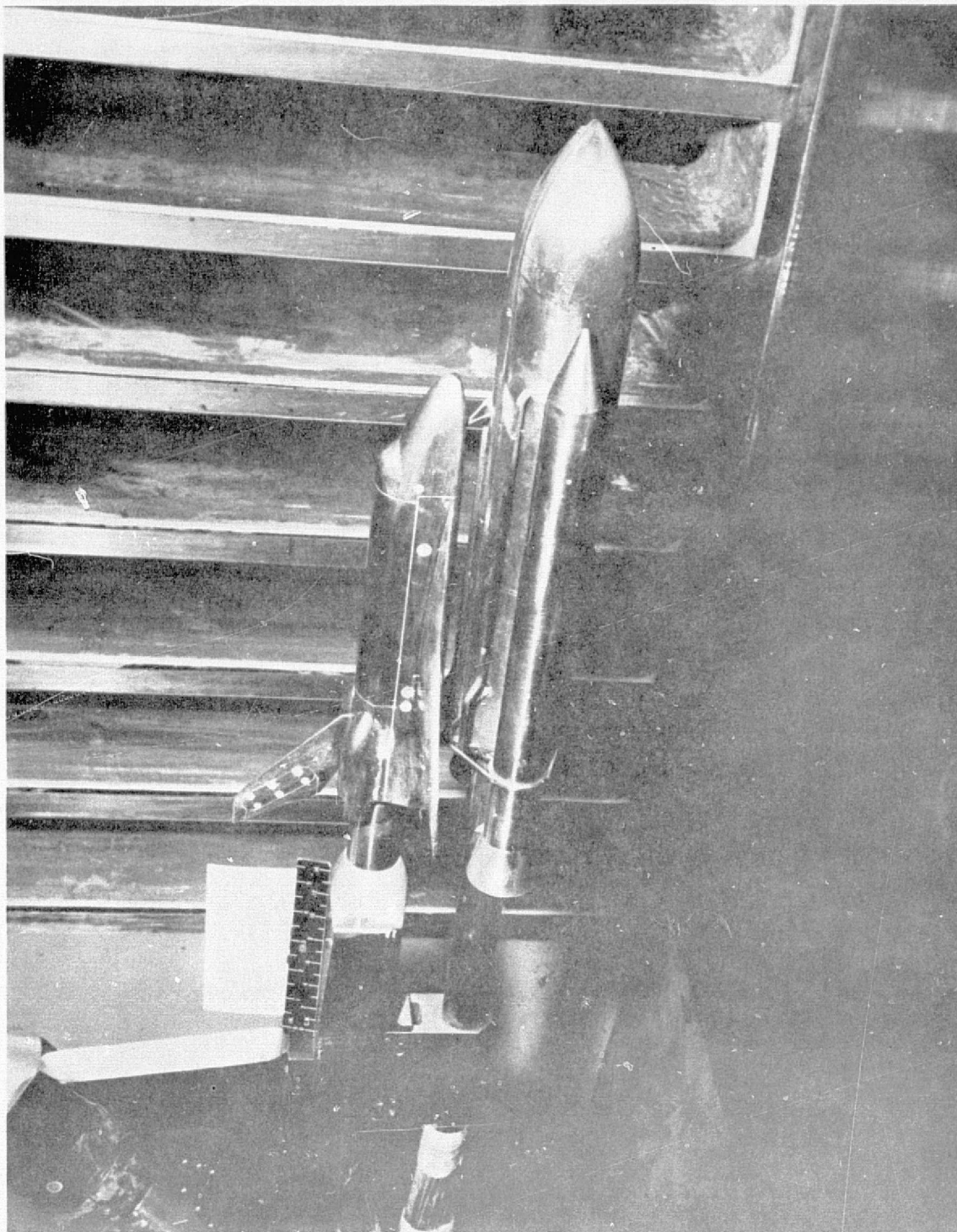
61



h. 26-OTS SRB Pressure Tap Locations
Figure 2. - Continued.

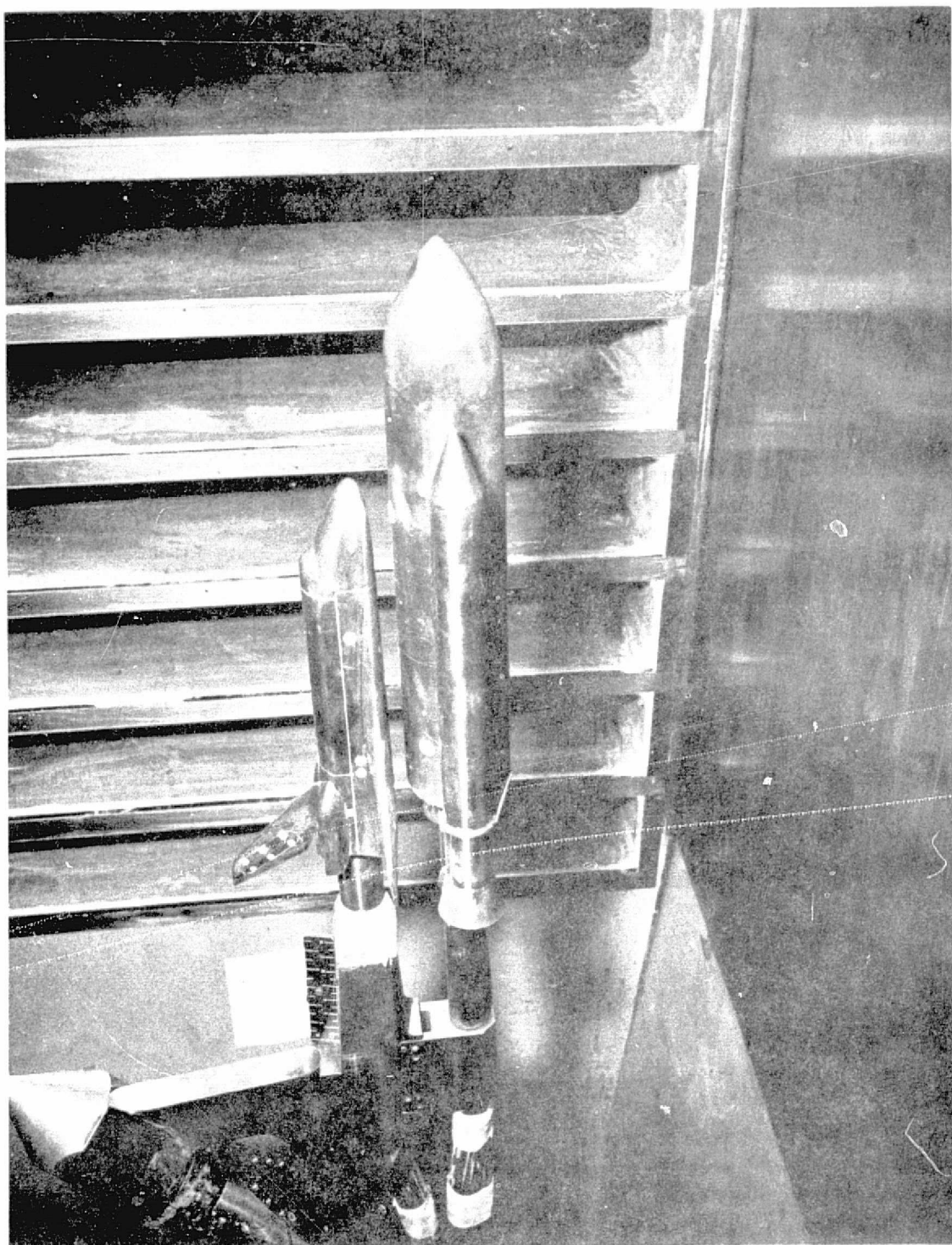


i. 26-OTS SRB Skirt Detail
Figure 2. - Concluded.



a. Integrated Vehicle, $O_1 + T_{15} + S_8 N_{16}$

Figure 3. - Model photographs.



b. Integrated Vehicle, $O_1 + T_{22} + S_8 N_{16}$

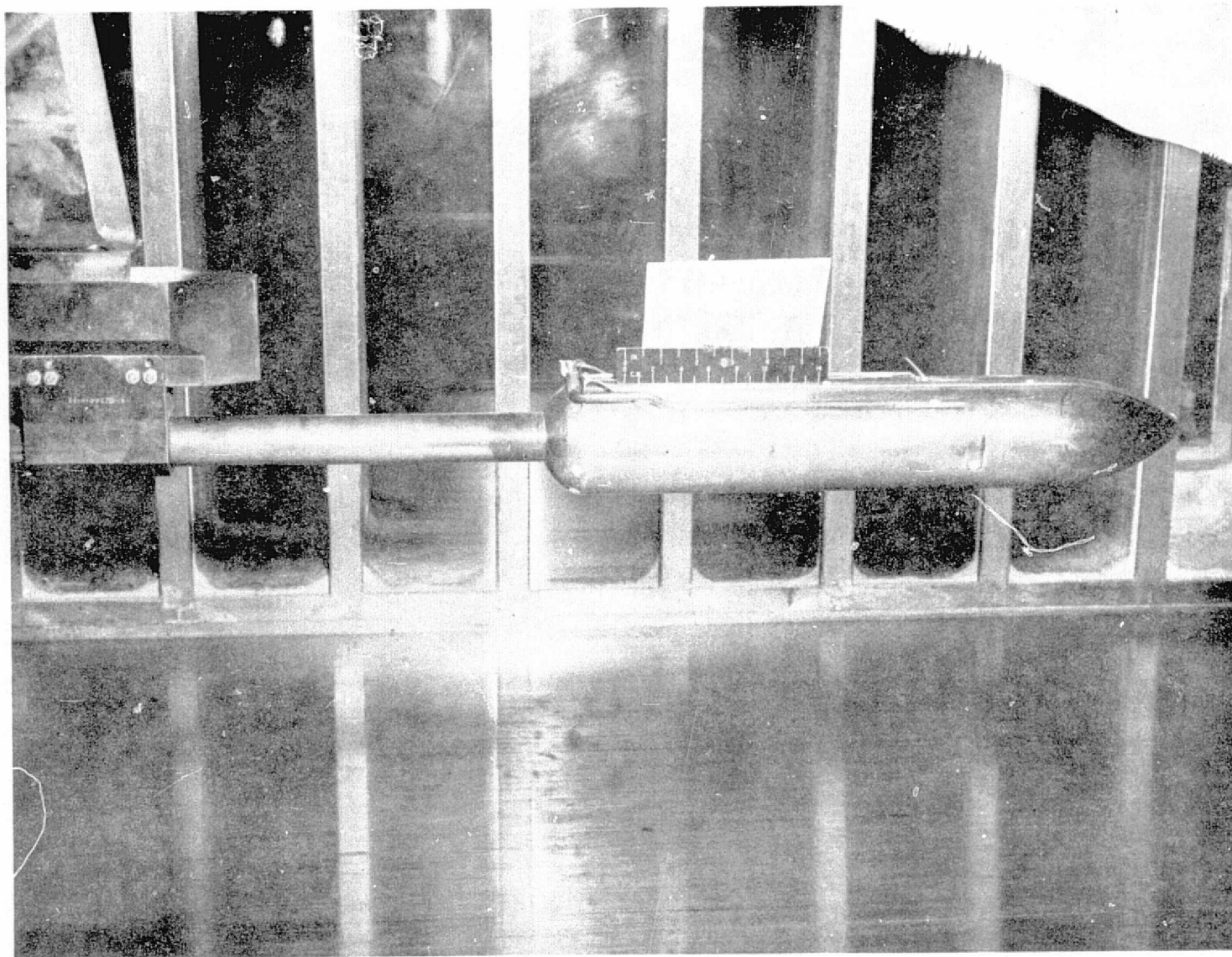
Figure 3. - Continued.



c. Orbiter, O₁

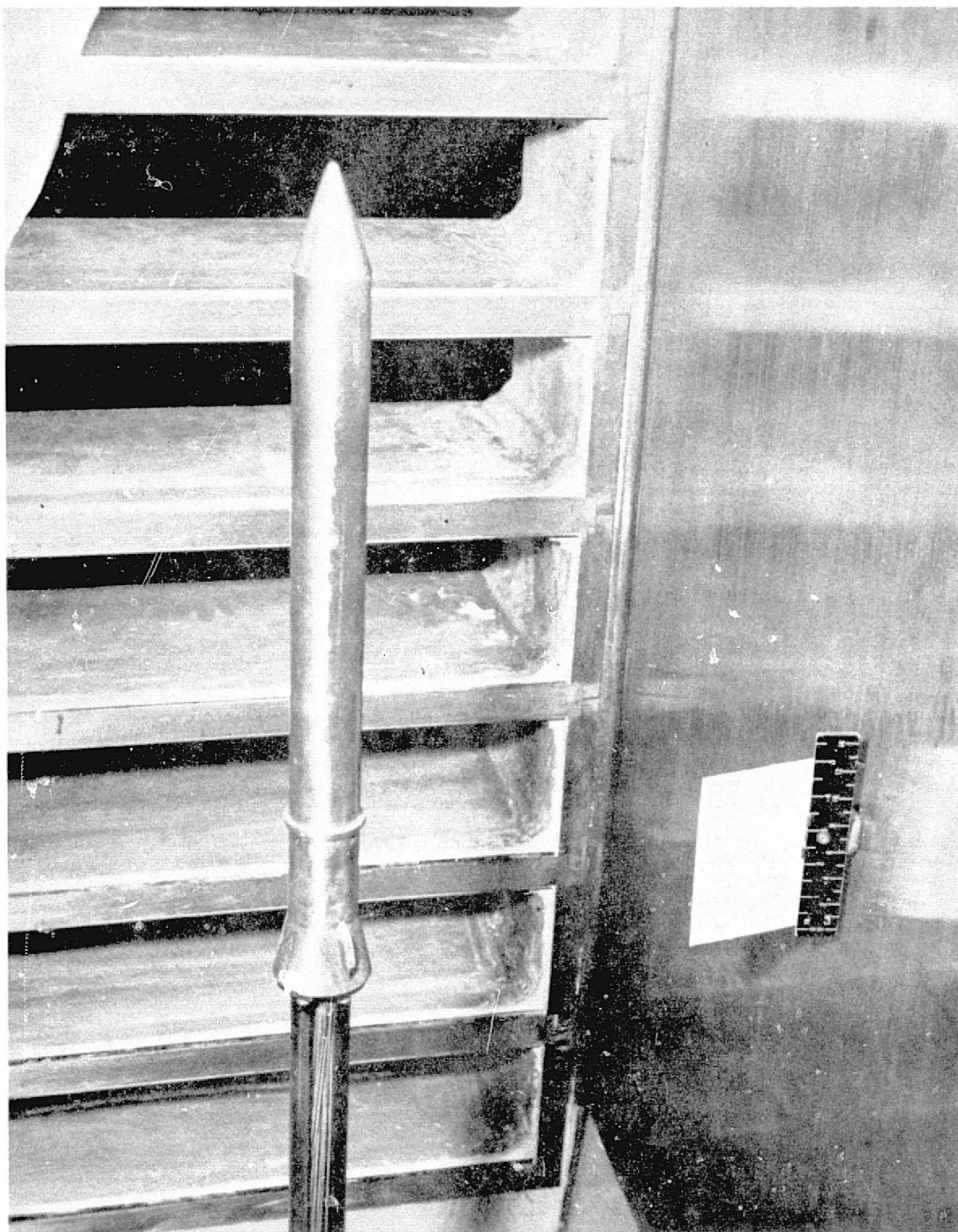
Figure 3. - Continued.

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d. External Tank, T₁₅

Figure 3. - Continued.



e. Solid Rocket Booster, S₈

Figure 3. - Concluded.

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OF POOR QUALITY

APPENDIX
TABULATED SOURCE DATA

Tabulations of plotted data are available on request from
Data Management Services.

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DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE . 1

UPWT 1059 (1H4) 01-15-SBN16 ORBITER FUSELAGE

(RQ3BAA) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

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SREF = 2690.0000 SQ.FT.   XMRP = .0000 INCHES
LREF = 1290.3000 INCHES   YMRP = .0000 INCHES
BREF = 1290.3000 INCHES   ZMRP = .0000 INCHES
SCALE = .0100

```

RN/L = 1.200 BETA = .000

MACH (1) = 2.360 ALPHA (1) = .000 PINF = .48020 Q(PSI) = 1.8721 RN/L = 1.2000 CPSTG = 1.7063

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9259	.5281	.2690	.3214		.2486	.2303	.7977		-.0166					
10.000								.2542							
20.000								.1291							
24.500								.1353							
39.000								.1244							
163.000														.3758	
174.000												.6202			
180.000	.9259				.2223			.1796	.1840	.2154	.5782		.5970		.5272
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0424	.0361	-.0096	-.0294	.0120		.2737				-.0915		-.1106	-.1087	
23.000		.0147													
24.000	.0345														
31.500	.0366														
33.100		.0053													
35.000	.0267														
40.000	.0147	-.0052													
45.000		-.0119													
50.000	.0753														
51.600													.0051		
57.000		-.0083													
60.900		-.0137													
65.000		-.0171													
68.000													-.0206		
69.000		-.0210													
79.300					-.0335										
95.500					-.0350	-.0009									
95.700		-.0029													
96.300	.0883														
103.000					-.0294										
105.000															-.0785
112.600					-.0255										
117.500												-.0143		-.0173	
120.800									.0976						
127.900						.1831									
129.500								.2085							

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OF POOR QUALITY

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 2

UPWT 1059 (IH4) 31-T15-S8N16 ORBITER FUSELAGE

(RQ3BAA)

MACH (1) = 2.360 ALPHA (1) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7810	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
130.000									.1538	.0314		.0120			
135.000		-.0601			-.0158										
139.600									.1623						
144.000												.0455			
155.000	.1438														
180.000	.0553	-.0356			-.0098										
X/LB	1.0250	1.0500													
PHI															
.000	-.0913	-.0712													

MACH (1) = 2.360 ALPHA (2) = 5.000 PINF = .48020 Q(PS1) = 1.8721 RN/L = 1.2000 CPSTG = 1.7063

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.8924	.5586	.2925	.2781		.115	.1167	.6199		.0024					
10.000								.1583							
20.000								.0658							
24.500								.0778							
39.000								.0923							
163.000														.3202	
174.000															
180.000	.8924				.1670			.1256	.1358	.1567	.4369	.5311	.4937		.4381
X/LB	.2000	.3000	.4000	.5000	.6000	.7810	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0284	.0045	-.0281	.0011	.0402		.2778				-.0893		-.1079	-.1051	
23.000		-.0100													
24.000	.0170														
31.500	.0097														
33.100		-.0147													
35.000	.0040														
40.000	-.0033	-.0220													
45.000		-.0246													
50.000	.0414														
51.600															
57.000		-.0351												-.0151	
60.900		-.0417													
65.000		-.0445													
68.000														-.0417	

PAGE 3

(RQ3BAA)

DEPENDENT VARIABLE CP/CPS

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - 144

PAGE 2

UPWT 1059 (1H4) 01-T15-SBN16 ORBITER FUSELAGE

(RQ38AA)

MACH (2) = 2.950 ALPHA (1) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 5

UPWT 1059 (1H4) 01-T15-SBN16 ORBITER FUSELAGE

(RQ3BAA)

MACH (2) = 2.950 ALPHA (2) = 5.000 PINF = .26525 Q(PSI) = 1.6156 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 8

UPWT 1059 (IH4) 01-T 5-SBN16 ORBITER FUSELAGE

(RQ39AA)

MACH (3) = 3.700 ALPHA (2) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7000	.8000	.8050	.8290	.8620	.9500	.9530	.9750	1.0000	1.0145
PHI															
65.000		.0087													
68.000													-.0220		
69.000		.0087													
79.300					-.0143										
95.500					-.0131		.0150								
95.700		-.0024													
96.300	.0510														
103.000					-.0119										
105.000															-.0399
112.600					-.0128										
117.500															
120.800									.0721						
127.900						.2274									
129.500								.1822							
130.000									.1219	.0311		-.0054			
135.000		-.0263			-.0122										
139.600									.0853						
144.000												.0179			
155.000	.1396														
180.000	.1061	-.0056			-.0116										
X/LB	1.0250	1.0500													
PHI															
.000	-.0350	-.0313													

MACH (4) = 4.600 ALPHA (1) = -5.000 PINF = .86200-01 Q(PS1) = .98085 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	1.1099	.5123	.2616	.1669		.1876	.2003	.7819		.0360					
10.000								.1893							
20.000								.1250							
24.500								.1204							
39.000								.1094							
163.000														.5099	
174.000															
180.000	1.1099				.3066			.2410	.2425	.2784	.6950	.8413	.9421		.8803

TABULATED SOURCE DATA - IH4

2

(RQ3BAA)

MACH (4) = 4.600 ALPHA (1) = -5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 10

UPWT 1059 (IH4) 01-T15-S8N16 ORBITER FUSELAGE

(RQ3BAA)

MACH (4) = 4.600 ALPHA (2) = .000 PINF = .66200-01 Q(PSI) = .99985 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 11

UPWT 1059 (IH4) 01-15-89N16 ORBITER FUSELAGE

(RQ3BAA)

MACH (4) = 4.600 ALPHA (2) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0500

PHI
.000 -.0272 -.0272

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UPWT 1059 (IH4) 01-T15-S8N16 ORB. UPPER WING

(RQ3UAA) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0170

PARAMETRIC DATA

RN/L = 1.200 BETA = .000

MACH (1) = 2.350 ALPHA (1) = .000 PINF = .48020 Q(P51) = 1.8721 RN/L = 1.2000 CPSTG = 1.7063

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0793		
.200	-.0432	-.0392	.0285
.600	-.0846	-.0809	
.800		-.0817	
.900		.1351	-.0832
.950		-.0725	

MACH (1) = 2.350 ALPHA (2) = 5.000 PINF = .48020 Q(P51) = 1.8721 RN/L = 1.2000 CPSTG = 1.7063

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0577		
.200	-.0703	-.0577	-.0064
.600	-.1036	-.1014	
.800		-.1015	
.900		.1335	-.0975
.950		-.0861	

MACH (2) = 2.950 ALPHA (1) = .000 PINF = .26525 Q(P51) = 1.6156 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0791		
.200	-.0731	-.0872	.0527
.600	-.0580	-.0557	
.800		-.0557	
.900		.0603	-.0375
.950		-.0402	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 13

UPWT 1059 (IH4) 01-T15-98N16 ORB. UPPER WING

(RQ3UAA)

MACH (2) = 2.950 ALPHA (2) = 5.000 PINF = .26525 Q(PSI) = 1.6156 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0596		
.200	-.0392	-.0238	.0179
.600	-.0675	-.0641	
.800		-.0641	
.900		.0650	-.0451
.950		-.0503	

MACH (3) = 3.700 ALPHA (1) = -5.000 PINF = .13175 Q(PSI) = 1.2629 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0062		
.200	-.0269	-.0202	.0087
.600	.0224	-.0202	
.800		.0370	
.900		-.0021	.5195
.950		.0982	

MACH (3) = 3.700 ALPHA (2) = .000 PINF = .13175 Q(PSI) = 1.2629 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0516		
.200	-.0109	.0071	.0568
.600	-.0371	-.0327	
.800		-.0325	
.900		.0339	-.0030
.950		-.0101	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 14

UPWT 1059 (IH4) 01-T15-S8N16 ORB. UPPER WING

(RQ3UAA)

MACH (4) = 4.600 ALPHA (1) = -5.000 PINF = .66200-01 Q(PSI) = .98085 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0901		
.200	.0119	.0331	.1013
.600	-.0182	-.0116	
.800		-.0070	
.900		.0371	.0334
.950		.0142	

MACH (4) = 4.600 ALPHA (2) = .000 PINF = .66200-01 Q(PSI) = .98085 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0588		
.200	-.0100	.0057	.0606
.600	-.0281	-.0214	
.800		-.0157	
.900		.0321	.0171
.950		.0054	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 15

UPWT 1059 (IH4) 01-T15-S8N16 ORB. LOWER WING

(RQ3LAA) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 1.209 BETA = .000

MACH (1) = 2.360 ALPHA (1) = .000 PINF = .43020 Q(P51) = 1.8721 RN/L = 1.2000 CPSTG = 1.7063

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.2947		.3284		-.0574
.001		-.0260	.0048		.1995	.0413	.2963	.0351		
.002						.0095		.0238		
.003						.3845		.3654		
.004						.0995		.0815		
.005						.0199		.0229		
.025				.0601	.0377		.0377			
.045				.0606						
.100						.0048		.0330	.0392	
.153	-.0213									
.177					.0158					
.200				-.0058						
.299	.0106									
.302				.0309			.0487			
.428						.1273				
.444	.0040									
.487					.2060					
.559				.2297						
.600						.2316				
.700						.2063				
.736	.2603									
.800						.0856				
.850						.0277				
.900				-.0378		-.0176	.0494		.0015	

MACH (1) = 2.360 ALPHA (2) = 5.000 PINF = .48020 Q(P51) = 1.8721 RN/L = 1.2000 CPSTG = 1.7063

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.3677		.3667		-.0947
.001		-.0287	.0232		.2990	.1058	.2709	.1186		
.002						.0601		.1037		
.003						.4034		.3304		
.004						.1747		.1738		
.005						.0798		.1057		

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 16

UPWT 1059 (IH4) 01-T15-SBN16 ORB. LOWER WING

(RQ3LAA)

MACH (1) = 2.17 ALPHA (2) = 5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.025				.0814	.0944		.1058			
.045				.0835						
.100						.0539		.1136	.1209	
.153	-.0215									
.177					.0703					
.200				.0345						
.299	.0116									
.302				.1037			.1329			
.428						.2384				
.444	.0312									
.487					.3015					
.559				.2852						
.600						.3810				
.700						.2439				
.736	.2784									
.800						.0997				
.850						.0375				
.900				-.0666		-.0095	.0760		.1400	

MACH (2) = 2.950 ALPHA (1) = .000 PINF = .26525 Q(PSI) = 1.6156 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.3129		.3364		-.0236
.001		-.0088	-.0100		.1899	.0680	.3057	.0596		
.002						.0310		.0441		
.003						.3991		.3786		
.004						.1308		.0988		
.005						.0447		.0452		
.025				.0185	.0373		.0572			
.045				.0225						
.100						.0274		.0487	.0538	
.153	-.0054									
.177					.0190					
.200				.0137						
.299	-.0114									
.302				.0318			.0356			
.428						.0537				
.444	-.0039									
.487					.0954					
.559				.1744						
.600						.1114				

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TABULATED SOURCE DATA - IH4

PAGE 17

UPWT 1059 (IH4) 01-715-SBN16 ORB. LOWER WING

(RQ3LAA)

MACH (2) = 2.950 ALPHA (1) = .000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.700						.1692				
.736	.1979									
.800						.1326				
.850						.0719				
.900						.0231	.0837		.0036	

MACH (2) = 2.950 ALPHA (2) = 5.000 PINF = .26525 Q(PSI) = 1.6156 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.3607		.3836		-.0430
.001		-.0179	-.0030		.2696	.1175	.3794	.1302		
.002						.0722		.1043		
.003						.3938		.3534		
.004						.1830		.1926		
.005						.0912		.1096		
.025				.0668	.0906		.1276			
.045				.0692						
.100						.0620		.1205	.1222	
.153	-.0119									
.177					.0362					
.200				.0093						
.299	-.0087									
.302				.0415			.0805			
.428						.0874				
.444	.0019									
.487					.1265					
.559				.1829						
.600						.2489				
.700						.2470				
.736	.1866									
.800						.1404				
.850						.0849				
.900				-.0409		.0390	.1240		.0302	

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TABULATED SOURCE DATA - 144

PAGE 18

UPWT 1059 (1H4) 01-T.5-S8N16 ORB. LOWER WING

(RQ3LAA)

MACH (3) = 3.700 ALPHA (1) = -5.000 PINF = 13175 Q(PSI) = 1.2629 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/8W	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000				.0363		.0400		.0255
.001	.0090	.1491	.2563	.0105	.3410	.0222		
.002				.3883		.4308		
.003				.0853		.0722		
.004				.0169		.0236		
.005				.2633		.0961		
.025		.0191	.0229		.0421			
.045		.0147						
.100				.0523		.0320	-.0092	
.153	.0133							
.177			.0640					
.200		.0318						
.299	.0079							
.302		.1296			.0089			
.428				.0475				
.444	.1782							
.487			.0050					
.559		-.0178						
.600				.0662				
.700				.0771				
.736	.0176							
.800				.0496				
.850				.0211				
.900		.0191		.0320	.0241		-.0003	

MACH (3) = 3.700 ALPHA (2) = .000 PINF = .13175 Q(PSI) = 1.2629 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CP5

2Y/8W	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000				.2540		.3475		
.001	.0063	-.0023	.1553	.0452	.2867	.0708		-.0103
.002				.0164		.0476		
.003				.3498		.3879		
.004				.0950		.1093		
.005				.0279		.0529		
.025		.0185	.0257		.0567			
.045		.0207						
.100								
.153	.0041			.0098		.0495	.0589	
.177								
.200			.0085					
.299	.0012	-.0035						

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TABULATED SOURCE DATA - IH4

PAGE 19

UPWT 1059 (IH4) 01-T115-SBN16 ORB. LOWER WING

(RQ3LAA)

MACH (3) = 3.700 ALPHA (2) = .000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	7500	.8500	.9500	.9980
X/CW										
.302				.0125			.0357			
.428						.0463				
.444	.0012				.0516					
.487				.1013						
.559						.0855				
.600						.0659				
.700										
.736	.1258									
.800						.1039				
.850						.0788				
.900				-.0176		.0442	.0308		-.0079	

MACH (4) = 4.600 ALPHA (1) = -5.000 PINF = .66200-01 Q(PSI) = .98085 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	7500	.8500	.9500	.9980
X/CW										
.000						.2833		.3702		.0112
.001		.0195	.0176		.1773	.0553	.2843	.0556		
.002						.0241		.0349		
.003						.3998		.4590		
.004						.1146		.0956		
.005						.0360		.0375		
.025				.0231	.0369		.0562			
.045				.0222						
.100						.0133		.0387	.0433	
.153	.0250									
.177					.0263					
.200				.0160						
.299	.0143									
.302				.0237			.0401			
.428						.0470				
.444	.0125									
.487					.0392					
.559				.0927						
.600						.0349				
.700						.0210				
.736	.1495									
.800						.0319				
.850						.0354				
.900				-.0070		.0278	.0070		.0001	

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DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 20

UPWT 1059 (1H4) 01-T1E-S8N16 ORB. LOWER WING

(RQ3LAA)

MACH (4) = 4.600 ALPHA (2) = .000 PINF = .63200-01 Q(PSI) = .98085 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.2711		.3789		.0039
.001		.0104	.0058		.1657	.0591	.3126	.0859		
.002						.0260		.0521		
.003						.3462		.3967		
.004						.1148		.1354		
.005						.0370		.0606		
.025				.0205	.0389		.1683			
.045				.0205						
.100						.0134		.0619	.0665	
.153	.0131									
.177					.0040					
.200				-.0003						
.299	.0031									
.302				.0082			.1293			
.428						.0344				
.444	.0031									
.487					.0361					
.559				.0606						
.600						.0389				
.700						.0196				
.736	.0960									
.800						.0337				
.850						.0391				
.900				-.0111		.0340	.1155		-.0043	

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TABULATED SOURCE DATA - IH4

PAGE 21

UPWT 1059 (IH4) 01-T15-SBN16 ORB. VERT. TAIL

(RQ3VAA) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 1.200 BETA = .000

MACH (1) = 2.360 ALPHA (1) = .000 PINF = .48020 Q(PSI) = 1.8721 RN/L = 1.2000 CPSTG = 1.7063

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3959	.3825	.2963	.3809
.300	.1327	.1107	.0891	
.500		.0930		
.700		-.0408		
.900	-.0579	-.0567	-.0383	

MACH (1) = 2.360 ALPHA (2) = 5.000 PINF = .48020 Q(PSI) = 1.8721 RN/L = 1.2000 CPSTG = 1.7063

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3288	.2957	.2302	.2925
.300	.0984	.0816	.0681	
.500		.0625		
.700		-.0555		
.900	-.0724	-.0671	-.0515	

MACH (2) = 2.950 ALPHA (1) = .000 PINF = .26525 Q(PSI) = 1.6156 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.4105	.3804	.3237	.4081
.300	.1108	.0740	.0550	
.500		.0781		
.700		-.0092		
.900	-.0342	-.0222	-.0164	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 22

UPWT 1059 (IH4) 01-T15-38N16 ORB. VERT. TAIL

(RQ3VAA)

MACH (1) = 2.950 ALPHA (2) = 5.000 PINF = .26325 Q(PSI) = 1.6156 RN/L = -1.2100 CPSTG = 1.7529

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE (P/CPS)

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3257	.3040	.2520	.3070
.300	.0713	.0417	.0239	
.500		.0449		
.700		-.0237		
.900	-.0450	-.0354	-.0318	

MACH (3) = 3.700 ALPHA (1) = -5.000 PINF = .13 75 Q(PSI) = 1.2629 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE (P/CPS)

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.0990	.0718	.0562	.2649
.300	.0018	.0736	-.0001	
.500		.0205		
.700		.0144		
.900	.3982	.2728	.4990	

MACH (3) = 3.700 ALPHA (2) = .000 PINF = .13 75 Q(PSI) = 1.2629 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE (P/CPS)

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.4243	.3444	.2958	.3607
.300	.0775	.0532	.0403	
.500		.0535		
.700		.0004		
.900	-.0099	-.0062	-.0096	

MACH (4) = 4.600 ALPHA (1) = -5.000 PINF = .66200-01 Q(PSI) = .98085 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE (P/CPS)

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.4028	.3643	.3761	.5182
.300	.0579	.0449	.0415	
.500		.0436		
.700		.0019		
.900	-.0009	-.0012	-.0060	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 23

UPWT 1059 (IH4) 01-T15-SBN16 ORB. VERT. TAIL

(RQ3VAA)

MACH (4) = 4.600 ALPHA (2) = .000 PINF = .66200-01 Q(PSI) = .98085 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .4006 .3542 .2385 .3443

.300 .0384 .0302 .0217

.500 .0275

.700 -.0080

.900 -.0101 -.0115 -.0125

DATE 23 APR 76

TABULATED SOURCE DATA - IH4

PAGE 24

UPWT 1059 (IH4) 01-15-S8N16 EXTERNAL TANK

(RQ3TAA) (15 APR 76)

REFERENCE DATA

```

SREF = 2690.0000 SQ.FT.   XMRP = .0030 INCHES
LREF = 1290.3000 INCHES   YMRP = .0030 INCHES
BREF = 1290.3000 INCHES   ZMRP = .0030 INCHES
SCALE = .0100

```

PARAMETRIC DATA

RN/L = 1.200 BETA = .000

MACH (1) = 2.360 ALPHA (1) = .000 PINF = .48020 Q(PS1) = 1.8721 RN/L = 1.2000 CPSTG = 1.7063

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 25

UPWT 1059 (IH4) 01-T15-S8N16 EXTERNAL TANK

(RQ3TAA)

MACH (1) = 2.360 ALPHA (1) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

151.000

.2577

180.000

.2929

-.0805

210.000

.3893

MACH (1) = 2.360 ALPHA (2) = 5.000 PINF = 48020 Q(PSI) = 1.8721 RN/L = 1.2000 CPSTG = 1.7053

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000

.4927

.3185

.1061

.0592

45.000

.0925

67.500

-.0367

90.000

.0237

-.0080

-.0122

.0131

.2872

.6102

-.0484

.0065

-.0392

112.500

-.0089

-.0179

.1625

-.0827

-.0827

-.0024

-.0310

135.000

157.500

167.000

180.000

.9921

.6935

.6546

.3127

.1819

.0268

-.0140

-.0076

-.0215

-.0009

.0293

.1001

197.000

.1877

.0315

-.0191

210.000

.0319

.0952

220.000

-.0275

225.000

.0033

232.000

-.0372

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000

.0065

.0063

45.000

.0019

.0052

.0424

67.500

-.0202

.0250

.0283

.0217

.0138

.0081

.1079

90.000

-.0888

-.0639

.0189

.0382

.0172

.0063

.0061

.1153

.1345

.1670

112.500

-.0977

-.0554

.0103

.0272

.0201

.0107

.0043

.0132

.1013

.1780

.2160

123.000

-.0085

-.0122

-.0179

.0119

.0063

-.0006

.0121

.0313

.1717

.2124

135.000

.0807

.0638

-.0070

-.0015

-.0076

-.0235

-.0205

-.0060

.0145

.0776

.1407

.2324

157.500

161.000

166.000

180.000

.2171

.0922

.0299

.0245

.0118

.0239

.0136

.0034

-.0170

-.0345

-.0064

.0280

.0714

.1783

.2576

197.000

.0142

-.0200

210.000

-.0056

.0065

.0672

.2726

220.000

.0329

232.000

.0181

.0585

ORIGINAL PAGE IS
OF POOR QUALITY

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 26

UPWT 1059 (IH4) 01-T15-S8N16 EXTERNAL TANK

(RQ3TAA)

MACH (1) = 2.360 ALPHA (2) = 5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA
123.000 .2241
151.000 .2566
180.000 .2754 -.0878
210.000 .3960

MACH (2) = 2.950 ALPHA (1) = .000 PINF = .36525 Q(PSI) = 1.6156 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA
.000 .3739 .2246 .0527 .0186
45.000 .0098
67.500 .0445
90.000 -.0147 -.0033 .0004 .0062 -.0128 -.0429
112.500 .0031 .0057 .0226 -.0054
135.000 .0041 -.0128 -.0038 .0173
157.500 .0554
167.000 .0595
180.000 .9811 .7160 .7112 .3596 .2240 .0589 -.0046 .0069 .0014 .0137 .0342 .0588
197.000 .2263 .0646
210.000 .0630
220.000 .0472
225.000 .0158
232.000 .0240 .0602

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA
.000 -.0130 -.0126
45.000 -.0208 -.0107
67.500 .0060 -.0023 -.0069 -.0069 -.0073 .0664
90.000 -.0456 -.0387 -.0086 -.0028 -.0095 -.0122 -.0140 -.0044 .0795
112.500 -.0413 -.0403 -.0006 .0202 .0249 .0275 .0222 .0161 .0376 .1244
123.000 .0115 .0453 .0094 .0017 .0028 .0093 .0114 .0054 .0435 .0953 .1280
135.000 .0691 .0928 .0260 .0486 .0123 .0082 -.0035 -.0131 -.0212 .0037 .0732 .1231
157.500 .0857 .0363 .0219 .0486 .0096 .0143 .0055
165.000 .2271 .1539 .0602 .0082 .0294 .0329 .0231 .0109 -.0082 -.0100 .0946 .1704
180.000 .0219 .0486 .0096 .0143 .0055
197.000 .0650 .0096 .0143 .0055
210.000 .0172 .0032
220.000 .0172 .0032
232.000 .0172 .0032

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(RQ3TAA)

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 28

UPWT 1059 (1H4) 01-T15-SBN16 EXTERNAL TANK

(RQ3TAA)

MACH (2) = 2.950 ALPHA (2) = 5.000

SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA
123.000 .1587
151.000 .1644
180.000 .1630 -.0654
210.000 .3082

MACH (3) = 3.700 ALPHA (1) = -5.000 PINF = .17175 Q(PSI) = 1.2629 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA
.000 .1430 .0248 .0073 -.0099
45.000 .0284
67.500 .0345
90.000 -.0325
112.500 -.0166
135.000 .0101
157.500 .0114 .0194 .0720
167.000 .0789
180.000 .7711 .7378 .4273 .2786 .0948 .0274 .0166 .0277 .0243 .0345 .0592 .9765
197.000 .1013 .0260 .0473 .2597
210.000 .0729
220.000
225.000 .1343
232.000 .0331
2.7681
.0162

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA
.000 -.0032 -.0172
45.000 -.0197 .0038 .0780
67.500 -.0262 -.0192 -.0192 .0244 .0008
90.000 -.0245 -.0226 -.0010 .0151 .0054 -.0054 -.0051 .0415 .0101
112.500 -.0026 .0141 .0318 .0415 .0446 .0351 .0305 .0221 .0803 .0118
123.000 .0339 .1067 .1411
135.000 .0860 .0407 .0200 .0177 .0262 .0318 .0236 .0695 .0911 .1657
157.500 .0831 .0405 .0473 .0379 .0658 .0209 .0165 .0074 .0095 .0431 .1186 .0729
161.000 .0345
166.000 .0284
180.000 .2008 .0447 .0439 .0174 .0285 .0328 .0237 .0339 .0240 .0124 .0027 .0638 .1505 .1588
197.000 .0237
210.000 .0351 .0126 .1198 .3016 .0972
220.000
232.000 .0140 .11918

TABULATED SOURCE DATA - IH4

PAGE 29

(RQ3TAA)

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

THETA				
123.000	.0214			
151.000		.1437		
180.000			-.0339	.2749
210.000			.0524	

SECTION (1)EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

[illegible][illegible]

UPWT 1059 (1H4) 01-T15-S8N16 EXTERNAL TANK

(RQ3TAA)

MACH (3) = 3.700 ALPHA (2) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .1135

151.000 .1121

180.000 .1524 -.0438

210.000 .1995

MACH (4) = 4.600 ALPHA (1) = -5.000 PINF = .66200-01 Q(PSI) = .98085 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000

45.000

67.500

90.000

112.500

135.000

157.500

167.000

180.000

197.000

210.000

220.000

225.000

232.000

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000

45.000

67.500

90.000

112.500

123.000

135.000

157.500

161.000

166.000

180.000

197.000

210.000

220.000

232.000

.2462 .1349 .0265

.0136

-.0143

-.0145

.0034

.0136

.0349

.1839

.0400

.0443

.0531

.0400

.1392

.0136

-.0143

-.0145

.0034

.0136

.0349

.1839

.0400

.0443

.0531

.0400

.1392

.0136

-.0143

-.0145

.0034

.0136

.0349

.1839

.0400

.0443

.0531

.0400

.1392

.0136

-.0143

-.0145

.0034

.0136

.0349

.1839

.0400

.0443

.0531

.0400

.1392

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 31

UPWT 1059 (IH4) 01-T 5-S8N16 EXTERNAL TANK

(RQ3TAA)

MACH (4) = 4.600 ALPHA (1) = -5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .1150

151.000

.1514

180.000

.1901

-.0137

210.000

.2604

MACH (4) = 4.600 ALPHA (2) = .000 PINF = .66200-01 Q(PS1) = .98085 RN/L = 1.2000 CPST6 = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000

.3310

.1991

.0485

45.000

67.500

90.000

112.500

135.000

157.500

167.000

180.000

197.000

210.000

220.000

225.000

232.000

.0205

.0597

.6129

.0538

.0103

.0085

.0035

.0025

.0120

.1804

.0162

.0261

.0195

.1103

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000

45.000

67.500

90.000

112.500

123.000

135.000

157.500

161.000

166.000

180.000

197.000

210.000

220.000

232.000

-.0053

-.0154

.0104

-.0150

-.0026

.0134

-.0050

-.0099

-.0040

-.0063

.0081

.0242

.0363

.0641

.0566

.0524

-.0034

-.0059

-.0033

.0094

.0112

.0118

.0162

.0315

.0184

.0271

.0124

.0025

.0042

.0071

.0084

.0075

.0324

.0048

.0030

.0005

.0107

.0127

.0071

.0084

.0075

.0324

.0048

.0030

.0005

.0091

-.0031

-.0002

-.0052

-.0034

.0048

.0030

.0005

.0094

.0112

.0118

.0162

.0315

.0184

.0271

.0764

.0957

.0105

.0135

.0080

-.0016

-.0042

.0188

.0188

.0764

.0957

ORIGINAL PAGE IS
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DATE 20 APR 75

TABULATED SOURCE DATA - IH4

PAGE 32

UPWT 1059 (IH4) 01-T13-SBN16 EXTERNAL TANK

(RQ3TAA)

MACH (4) = 4.600 ALPHA (2) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .0864

151.000 .0860

180.000 .1018 -.0303

210.000 .1734

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 33

UPWT 1059 (IH4) 01-T1E-S8N16 SOLID RCKT. BSTR.

(RQ3SAA) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 1.200 BETA = .000

MACH (1) = 2.360 ALPHA (1) = .000 PINF = .43020 Q(PSt) = 1.9721 RN/L = 1.2000 CPSTG = 1.7063

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.0057		.1273	.1296		.1285							-.0186		
180.000				.1263		.1403					-.0275		.0558		
225.000										-.0262			.0370		.0012
247.500												-.0091	.0257	.0120	-.0021
260.000								.6147							
270.000		.2336	.1421	.1445	.1604	.5885	.7648		-.0623	-.0727	-.0870	-.0110	-.0233	-.0256	-.0284
315.000												-.0468			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	.0005	.0995	-.0279					.1239				.1152			
180.000	.0045	.4275	.1258	-.0189				.0916			.0380	-.0239			
210.000					-.0277	.2342		-.0142		-.0715					
215.000							-.0580		-.1069			-.1204			
225.000		.4960	-.0475	-.0780				-.0239				-.0808			
240.000								-.0306				-.0471	-.0400		
247.500	.1250														
270.000	.0539	.2684	-.0628	-.0687				-.0265					.1318		
315.000	.0987														

MACH (1) = 2.360 ALPHA (2) = 5.000 PINF = .43020 Q(PSt) = 1.9721 RN/L = 1.2000 CPSTG = 1.7063

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	.9916		.1094	.1134		.1136							-.0356		
180.000				.0674		.0801					-.0648		.0202		
225.000										-.0945			.0206		.0025
247.500												-.0572	.0364	.0173	.0030
260.000								.5389							
270.000		.2339	.1406	.1527	.1593	.6882	.7895		-.0638	-.0901	-.0911	-.0639	.0321	.0178	.0025
315.000												-.0113			

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 34

UPWT 1059 (IH4) 01-T15-S8N16 SOLID RCKT. BSTR.

(RQ3SAA)

MACH (1) = 2.360 ALPHA (2) = 5.000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

[illegible]

MACH (2) = 2.950 ALPHA (1) = .000 PINF = .26325 Q(PSI) = 1.6156 RN/L = 1.2100 CPSTG = 1.7529

SECTION () SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CP5

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

[illegible]

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

PSI									
90.000	-.0023	.1092	-.0113			.0497			.0895
180.000	.0019	.2562	.1818	.0049		.0701		.0553	.0075
210.000					-.0087	.2475			
215.000							.0259	-.0339	
225.000		.4810	-.0174	-.0459		-.0040		-.0562	-.0713
240.000							-.0002		-.0438
247.500	.0057						-.0272		-.0343
270.000	.0014	.2707	-.0340	-.0508					-.0455
315.000	.0014						-.0310		.0632

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 35

UPWT 1059 (IH4) 01-T15-58N18 SOLID RCKT. BSTR.

(RQ3SAA)

MACH (2) = 2.950 ALPHA (2) = 5.000 PINF = .26525 Q(PSI) = 1.6156 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.0750		.0990	.1022		.1047								-.0269	
180.000				.0736		.0681					-.0410			-.0029	
225.000										-.0431				-.0007	.0088
247.500								.5783				-.0456		-.0034	.0093
260.000															
270.000		.2648	.1586	.0948	.1538	.1645	.9532		.0012	-.0320	-.0468	-.0435	-.0139	.0161	.0098
315.000											-.0166				
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	-.0014	.1257	.0173					.0854						.0601	
180.000	.0241	.2076	.0394	.0367				.1296				.1072		.0482	
210.000					.0044	.2395		.0439		-.0103					
215.000							-.0275		-.0603		-.0727				
225.000		.1713	.0579	-.0392				.0096			-.0384				
240.000								-.0261			-.0422	-.0402			
247.500	.0779														
270.000	.0494	.1830	-.0413	-.0527				-.0303						.0660	
315.000	.0040														

MACH (3) = 3.700 ALPHA (1) = -5.000 PINF = .13175 Q(PSI) = 1.2629 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	.0990		.0962	.0973		-.0210								-.0186	
180.000				.1676		.0107					.0263			.0297	
225.000										.0749				.0318	.1389
247.500								.2967				.0352	.0462	.0250	.0311
260.000															
270.000		.1821	.1104	.1360	.1614	.3853	.0021		-.0119	-.0199	-.0284	-.0175	-.0010	-.0133	.0010
315.000											-.0140				
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	.0449	-.0243	.0016					-.0083				.1991			
180.000	.1187	.1148	.0020	.0362				.0386			.0041	.0050			
210.000					.1443	.0337		-.0060		.0081					
215.000							-.0298		-.0396		.0301				
225.000		.0736	-.0299	-.0072				-.0255			-.0273				
240.000								-.0298			-.0340	-.0086			

UPWT 1059 (IH4) 01-T15-S3N16 SOLID RCKT. BSTR.

(RQ3SAA)

MACH (3) = 3.700 ALPHA (1) = -5.000

SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS

X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 .9600 .9900

PSI

247.500	.8287											
270.000	.1894	-.0212	-.0386	-.0340			.0340					-.0400
315.000	.0000											

MACH (3) = 3.700 ALPHA (2) = .000 PINF = .13175 Q(PSI) = 1.2629 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS

X/LSRB .0000 .0040 .0250 .0500 .0750 .1000 .1100 .1150 .1300 .1500 .2000 .3000 .4000 .5000 .6000

PSI

90.000	1.1944		.0946	.0946		.0946								
180.000				.1328		.1080								
225.000									.0077					
247.500														
260.000														
270.000		.2968	.1849	.1106	.1430	.1706	.3724	.6477	.0015	-.0032	-.0218	-.0147	-.0174	-.0147
315.000														

X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 .9600 .9900

PSI

90.000	-.0059	.1057	-.0078											
180.000	.0098	.1714	.1449	.0122				.0364				.0397		
210.000					-.0049	.1432		.0457				.0451	.0150	
215.000								.0348		-.0079				
225.000		.3592	.0062	-.0269										
240.000														
247.500	.0125													
270.000	.0045	.2228	-.0188	-.0310				-.0152						
315.000	.0025							-.0250				-.0256	-.0252	

MACH (4) = 4.600 ALPHA (1) = -5.000 PINF = .66200-01 Q(PSI) = .98085 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS

X/LSRB .0000 .0040 .0250 .0500 .0750 .1000 .1100 .1150 .1300 .1500 .2000 .3000 .4000 .5000 .6000

PSI

90.000	1.3125		.1018	.0980		.0975								
180.000				.1992		.1664								
225.000														
247.500														
260.000														
270.000		.3179	.1992	.1163	.1501	.1452	.2952	.4699	.0178	.0159	-.0025	-.0116	-.0073	.0031

TABULATED SOURCE DATA - 1H4

UPWT 1059 (1H4) 01-T.5-SBN16 SOLID RCKT. BSTR.

(RQ3SAA)

MACH (4) = 4.600 ALPHA (1) = -5.000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

[illegible]

MACH (4) = 4.600 ALPHA (2) = .000 PINF = .66200-01 Q(PS1) = .98085 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 38

UPWT 1059 (IH4) 01-T15-S8N16 ORBITER FUSELAGE

(RQ39AB) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 BETA = .000

MACH (1) = 2.350 ALPHA (1) = .000 PINF = 1.1969 Q(PSI) = 4.6665 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.8480	.4186	.1423	.1715		.3586	.4341	.7518		.0140					
10.000								.4196							
20.000								.3404							
24.500								.2924							
39.000								.1841							
163.000														.3580	
174.000															
180.000	.8480				.2248			.1780	.1750	.2008	.5749	.6101	.6003		.5276
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0872	.0416	-.0148	-.0409	-.0051		2862				-.1088		-.1209	-.1197	
23.000		.0047													
24.000	.0509														
31.500	.0607														
33.100		-.0097													
35.000	.0473														
40.000	.0260	-.0051													
45.000		-.0097													
50.000	.0814														
51.600															
57.000		-.0055											.0058		
60.900		-.0101													
65.000		-.0175													
68.000													-.0294		
69.000		-.0231													
79.300					-.0429										
95.500					-.0328		-.0015								
95.700		.0002													
95.300	.1311														
103.000					-.0294										
105.000															-.0797
112.600					-.0264										
117.500															
120.900									.0958				-.0203	-.0148	
127.900						.1950									
129.500								.2142							

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 39

UPWT 1059 (IH4) 01-TIG-S8N16 ORBITER FUSELAGE

(RQ3BAB)

MACH (1) = 2.360 ALPHA (1) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
130.000									.1449	.0252		.0162			
135.000		-.0621			-.0143										
139.600									.1591						
144.000												.0409			
155.000	.1218														
180.000	.0420	-.0387			-.0045										
X/LB	1.0250	1.0500													
PHI															
.000	-.1092	-.0888													

PHI

130.000

135.000

139.600

144.000

155.000

180.000

X/LB

PHI

.000

MACH (1) = 2.360

ALPHA (2) =

5.000

PINF = 1.1969

Q(PSI) = 4.6665

RN/L = 3.0000

CPSTG = 1.7063

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.7805	.4189	.3514	.3752		.3161	.2779	.7746		-.0193					
10.000								.2557							
20.000								.1350							
24.500								.1424							
39.000								.1180							
163.000														.3159	
174.000															
180.000	.7805				.1603			.1209	.1421	.1457	.4698	.5339	.5052		.4461
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0378	.0069	-.0323	-.0424	.0413		.3007				-.1080		-.1213	-.1180	
23.000		-.0117													
24.000	.0254														
31.500	.0340														
33.100		-.0277													
35.000	.0278														
40.000	.0034	-.0335													
45.000		-.0390													
50.000	.0443														
51.600															
57.000		-.0328													
60.900		-.0377													
65.000		-.0417													
68.000															

PHI

.000

10.000

20.000

24.500

39.000

163.000

174.000

180.000

X/LB

PHI

.000

23.000

24.000

31.500

33.100

35.000

40.000

45.000

50.000

51.600

57.000

60.900

65.000

68.000

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 41

UPWT 1059 (IH4) 01-T15-S8N16 ORBITER FUSELAGE

(RQ3BA9)

MACH (2) = 2.950 ALPHA (1) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
24.000	.0511														
31.500	.0597														
33.100		.0338													
35.000	.0638														
40.000	.0846	.0355													
45.000		.0309													
50.000	.1092														
51.600													.0041		
57.000		.0191													
60.900		.0188													
65.000		.0185													
68.000															
69.000		.0181													
79.300															
95.500															
95.700															
96.300	.0509	.0263													
103.000															
105.000															
112.600															
117.500															
120.800															
127.900															
129.500															
130.000															
135.000															
139.600															
144.000															
155.000	.1380														
180.000	.0814	-.0211													
X/LB	1.0250	1.0500													
PHI															
.000	-.0616	-.0427													

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OF POOR QUALITY

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 42

UPWT 1059 (1H4) 01-115-S8N16 ORBITER FUSELAGE

(RQ3BAB)

MACH (2) = 2.950 ALPHA (2) = 5.000 PINF = .66345 Q(PS1) = 4.0415 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 43

UPWT 1059 (IH4) 01-T15-S8N16 ORBITER FUSELAGE

(RQ38AB)

MACH (2) = 2.950 ALPHA (2) = 5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0500

PHI

.000 -.0659 -.0508

MACH (3) = 3.700 ALPHA (1) = -10.000 PINF = .32922 Q(PSI) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE (P/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	1.2510	.5358	.1914	.2026		.1954	.1164	.7911		.0298					
10.000								.4815							
20.000								.1317							
24.500								.1164							
39.000								.1342							
163.000														.5973	
174.000															
180.000	1.2510				.4123			.3451	.3396	.3776	.9124	1.0300	1.0203		.9480
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.1200	.0364	.0575	.0591	.0413		.2492				-.0292		-.0444	-.0425	
23.000		.0430													
24.000	.0784														
31.500	.0893														
33.100		.0600													
35.000	.0879														
40.000	.0712	.0675													
45.000		.0658													
50.000	.0833														
51.600															
57.000		.0410												.0479	
60.900		.0402													
65.000		.0303													
68.000													.0233		
69.000		.0229													
79.300					.0323										
95.500					.0409		.0269								
95.700		.0161													
96.300	.0662														
103.000					.0463										
105.000															
112.600					.0464										
117.500															
120.800								.1448			.0334		.0373		

-.0366

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 45

UPWT 1059 (IH4) Q1-T15-S8N16 ORBITER FUSELAGE

(RQ3BAB)

MACH (3) = 3.700 ALPHA (2) = -5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
65.000		.0256													
68.000															
69.000		.0140													
79.300					.0163										
95.500					.0200		.0030								
95.700		.0134													
96.300	.0614														
103.000					.0195										
105.000															
112.600					.0193										
117.500															
120.800															
127.900						.1612				.1206					
129.500								.2078							
130.000									.1870	.0685		.0263			
135.000															
139.600									.1993						
144.000												.0607			
155.000	.2084														
180.000	.1561	.0166			.0087										
X/LB	1.0250	1.0500													
PHI															
.000	-.0422	-.0402													

MACH (3) = 3.700 ALPHA (3) = .000 PINF = .32922 Q(PSI) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.8682	.4174	.1841	.1417		.1502	.2343	.7194		-.0075					
10.000								.2913							
20.000								.1869							
24.500								.1316							
39.000								.0850							
163.000															
174.000															
180.000	.8682				.2023			.1555	.1554	.1791	.5217	.6243	.6257	.3559	.5998

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DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 45

UPWT 1059 (IH4) 01-115-S8N16 ORBITER FUSELAGE

【RQ3BAB】

MACH (3) = 3.700 ALPHA (3) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 47

UPWT 1059 (1H4) 01-T 5-SBN18 ORBITER FUSELAGE

(RQ3BAB)

MACH (3) = 3.700 ALPHA (4) = 5.000 PINE = 32922 Q(PSI) = 3.1550 RN/L = 3.0000 CP5TG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CP5

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 48

UPWT 1059 (IH4) 01-T15-SBN16 ORBITER FUSELAGE

(RQ3BAB)

MACH (3) = 3.700 ALPHA (4) = 5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0500

PHI

.000 -.0286 -.0225

MACH (4) = 4.600 ALPHA (1) = -10.000 PINF = .16565 Q(PS1) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 .1250 .1500 .1600 .1650 .1700 .1750 .1800

PHI

.000	1.3880	.5926	.1995	.1851		.1835	.1179	.7367		.0501				
10.000								.3972						
20.000								.1055						
24.500								.1201						
39.000								.1300						
163.000													.6012	
174.000														
180.000	1.3880				.4406		.2963	.2869	.3252	.9155	1.0789	1.0624		.8537

X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI

.000	.1161	.0284	.0502	.0566	.0361		.2155				-.0123		-.0257	-.0235
23.000		.0413												
24.000	.0817													
31.500	.0740													
33.100		.0461												
35.000	.0633													
40.000	.0644	.0388												
45.000		.0377												
50.000	.0809													
51.600														
57.000		.0363										.0432		
60.900		.0281												
65.000		.0273												
68.000												.0208		
69.000		.0208												
79.300					.0290									
95.500					.0307		.0299							
95.700		.0174												
96.300	.0884													
103.000					.0309									
105.000														-.0234
112.600					.0279									
117.500														
120.800								.1291		.0326		.0340		

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 49

UPWT 1059 (IH4) 01-T15-SBN16 ORBITER FUSELAGE

(RQ3BAB)

MACH (4) = 4.600 ALPHA (1) = -10.000

SECTION (1) ORBITER FUSELAGE				DEPENDENT VARIABLE CP/CPS											
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.9000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
127.900						.3304									
129.500								.2871							
130.000									.1791	.0669		.0252			
135.000		.0165			.0293										
139.600									.1827						
144.000												.0401			
155.000	.2593														
180.000	.1794	.0170			.0305										
X/LB	1.0250	1.0500													
PHI															
.000	-.0247	-.0246													

MACH (4) = 4.600 ALPHA (2) = -5.000 PINF = .13565 Q(PSI) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE				DEPENDENT VARIABLE CP/CPS											
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.7800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	1.1460	.5089	.1682	.1702		.1706	.1301	.8423		.0260					
10.000								.3150							
20.000								.1085							
24.500								.1154							
39.000								.1077							
163.000														.5355	
174.000												.8458			
180.000	1.1460				.3106			.2476	.2447	.2795	.7836		.9614		.8765
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.9000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0626	.0274	.0394	.0391	.0236		.428				-.0128		-.0240	-.0236	
23.000		.0344													
24.000	.0219														
31.500	.0201														
33.100		.0377													
35.000	.0241														
40.000	.0417	.0315													
45.000		.0311													
50.000	.0626														
51.600															
57.000		.0279													
60.900		.0276													

:0070

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 50

UPWT 1059 (IH4) 01-T15-S8N16 ORBITER FUSELAGE

(RQ39AB)

MACH (4) = 4.600 ALPHA (2) = -5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7000	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
65.000		.0231													
68.000													-0.0010		
69.000		.0143													
79.300					.0177										
95.500					.0197		.0059								
95.700		.0147													
96.300	.0709														
103.000					.0187										
105.000															-0.0238
112.600					.0179										
117.500												.0241		.0250	
120.800									.1402						
127.900						.1697									
129.500							.1752								
130.000								.1773	.0780		.0266				
135.000		.0009			.0027										
139.600								.1593							
144.000												.0460			
155.000	.2313														
180.000	.1684	.0161			.0126										

X/LB 1.0250 1.0500

PHI

.000 -0.0243 -0.0238

MACH (4) = 4.600 ALPHA (3) = .000 PINF = .16565 Q(PSI) = 2.4532 RN/L = 3.0000 CP5TG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9125	.5296	.2202	.1329		.1515	.1724	.6100		.0081					
10.000								.1504							
20.000								.1247							
24.500								.1027							
39.000								.0844							
163.000														.3616	
174.000											.6144				
180.000	.9125				.2036			.1549	.1574	.1796	.4942	.6656			.6603

PAGE 51

(RQ3BAB)

SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 52

UPWT 1059 (1H4) 01-T.5-SBN16 ORBITER FUSELAGE

(RQ3BAB)

MACH (4) = 4.600 ALPHA (4) = 5.000 PINF = 16565 Q(PS1) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 75

TABULATED SOURCE DATA - IH4

PAGE 53

UPWT 1059 (IH4) 01-T15-S8N16 ORBITER FUSELAGE

(R03B48)

MACH = 4.600 ALPHA (4) = 5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0000

PHI
.000 -.0223 -.0191

ORIGINAL PAGE IS
OF POOR QUALITY

DATE 30 APR 76

TABULATED SOURCE DATA - IH4

PAGE 54

UPWT 1059 (IH4) 01-T15-S8N16 ORG. UPPER WING

(RQ3UAB) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 3.000 BETA = .000

MACH (1) = 2.360 ALPHA (1) = .000 PINF = 1.1969 Q(PSI) = 4.6665 RN/L = 3.0000 CPSTG = 1.7063

SECTION (110RB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0727		
.200	-.0434	-.0406	.0262
.600	-.0906	-.1074	
.800		-.1010	
.900		.1250	-.0978
.950		-.0753	

MACH (1) = 2.360 ALPHA (2) = 5.000 PINF = 1.1969 Q(PSI) = 4.6665 RN/L = 3.0000 CPSTG = 1.7063

SECTION (110RB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0521		
.200	-.0708	-.0547	-.0058
.600	-.1157	-.1157	
.800		-.1127	
.900		.1308	-.1073
.950		-.0951	

MACH (2) = 2.950 ALPHA (1) = .000 PINF = .66345 Q(PSI) = 4.0415 RN/L = 3.0200 CPSTG = 1.7529

SECTION (110RB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0803		
.200	-.0179	-.0019	.0544
.600	-.0649	-.0656	
.800		-.0655	
.900		.0597	-.0528
.950		-.0524	

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01-T15-SBN16 ORB, UPPER WING

(RQ3UAB)

MACH (2) = 2.950 ALPHA (2) = 5.000 PINF = .6E345 Q(P51) = 4.0415 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) ORB, UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0686		
.200	-.0337	-.0183	.0204
.600	-.0718	-.0720	
.800		-.0698	
.900		.0656	-.0617
.950		-.0601	

MACH (3) = 3.700 ALPHA (1) = -10.000 PINF = .32922 Q(P51) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB, UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1705		
.200	.0329	.0606	.1326
.600	-.0204	-.0229	
.800		-.0265	
.900		.0386	-.0049
.950		-.0102	

MACH (3) = 3.700 ALPHA (2) = -5.000 PINF = .32922 Q(P51) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB, UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1089		
.200	.0172	.0334	.1019
.600	-.0289	-.0324	
.800		-.0341	
.900		.0402	-.0153
.950		-.0216	

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 56

UPWT 1059 (1H4) 01-T15-58N16 ORB. UPPER WING

(RQ3UA9)

MACH = 3.700 ALPHA (3) = .000 PINF = .32922 Q(PSI) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE (P/CPS)

2Y/BW .4000 .6000 .8000

X/CW

.050	.0673		
.200	-.0082	.0123	.0606
.600	-.0400	-.0372	
.800		-.0373	
.900		.0383	-.0241
.950		-.0277	

MACH (3) = 3.700 ALPHA (4) = 5.000 PINF = .32922 Q(PSI) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0500		
.200	-.0153	-.0087	.0367
.600	-.0418	-.0428	
.800		-.0409	
.900		.0402	-.0302
.950		-.0325	

MACH (4) = 4.600 ALPHA (1) = -10.000 PINF = .18565 Q(PSI) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1681		
.200	.0442	.0684	.1457
.600	-.0141	-.0114	
.800		-.0115	
.900		.0365	.0097
.950		-.0031	

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01-T15-S0N16 ORB. UPPER WING

(RQ3UAB)

MACH (4) = 4.600 ALPHA (2) = -5.000 PINF = .16565 Q(PSI) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1033		
.200	.0194	.0346	.1034
.600	-.0193	-.0157	
.800		-.0155	
.900		.0369	.0046
.950		-.0057	

MACH (4) = 4.600 ALPHA (3) = .000 PINF = .16565 Q(PSI) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0657		
.200	-.0024	.0138	.0616
.600	-.0236	-.0211	
.800		-.0214	
.900		.0369	.0003
.950		-.0102	

MACH (4) = 4.600 ALPHA (4) = 5.000 PINF = .16565 Q(PSI) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0457		
.200	-.0166	-.0023	.0362
.600	-.0288	-.0257	
.800		-.0256	
.900		.0357	-.0063
.950		-.0124	

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01-T 5-SBN16 ORB. LOWER WING

(RQ3LAB) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BRP = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 3.000 BETA = .000

MACH (1) = 2.360 ALPHA (1) = .000 PINF = 1.1969 Q(PSI) = 4.6665 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.2836		.3224		-.0527
.001		-.0360	-.0228		.1988	.0339	.2902	.0281		
.002						.0034		.0194		
.003						.3728		.3443		
.004						.0872		.0738		
.005						.0151		.0176		
.025				.0681	.0348		.0383			
.045				.0667						
.100						.0043		.0285	.0315	
.153	-.0295									
.177					.0000					
.200				-.0148						
.299	-.0089									
.302				.0018			.0177			
.428						.1502				
.444	.0004									
.487					.1754					
.559				.1954						
.600						.1911				
.700						.1583				
.736	.2961									
.800						.0740				
.850						.0259				
.900				-.0466	-.0178	.0400		.0406		

MACH (1) = 2.360 ALPHA (2) = 5.000 PINF = 1.1969 Q(PSI) = 4.6665 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.3559		.3553		-.0869
.001		-.0506	.0460		.2654	.0999	.3609	.0982		
.002						.0582		.0867		
.003						.3984		.3259		
.004						.1596		.1564		
.005						.0763		.0873		

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01-T15-SBN16 ORB. LOWER WING

(RQ3LAB)

MACH (1) = 2.350 ALPHA (2) = 5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.025				.0804	.0853		1072			
.045				.0785						
.100						.0462		.1029	.1083	
.153	-.0483									
.177					.0270					
.200				.0018						
.299	.0179									
.302				.0809			0836			
.428						.2416				
.444	.0055									
.487					.2681					
.559				.2912						
.600						.3097				
.700						.2350				
.736	.3227									
.800						.1147				
.850						.0539				
.900				-.0736		.0028	.0828		.1118	

MACH (2) = 2.950 ALPHA (1) = .000 PINF = .66345 Q(PSI) = 4.0415 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.3170		.3471		-.0225
.001		.0031	-.0078		.2070	.0872	.3235	.0659		
.002						.0484		.0517		
.003						.3919		.3657		
.004						.1298		.1273		
.005						.0683		.0519		
.025				.0106	.0745		.0781			
.045				.0125						
.100						.0368		.0641	.0677	
.153	-.0061									
.177					.0267					
.200				.0395						
.299	-.0106									
.302				.0273			.0401			
.428						.0378				
.444	-.0091									
.487					.1254					
.559				.1497						
.600						.1240				

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UPWT 1059 (IH4) 01-T15-S8N16 ORB. LOWER WING.

(RQ3LAB).

MACH (2) = 2.950 ALPHA (1) = .000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.700

.1576

.736

.1788

.800

.1185

.850

.0699

.900

-.0338

.0253

.0841

-.0217

MACH (2) = 2.950 ALPHA (2) = 5.000 PINF = .63345 Q(P51) = 4.0415 RN/L = 3.0200 CP5TG = 1.7529

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000

.3584

.3769

-.0510

.001

-.0224

-.0226

.2763

.1240

.3678

.1205

.002

.0738

.0990

.003

.3984

.3447

.004

.1748

.1865

.005

.0957

.1029

.025

.0951

.0942

.192

.045

.0942

.0638

.1135

.1165

.100

.153

-.0226

.0421

.177

.0273

.200

.299

-.0239

.0423

.0783

.302

.428

.0373

.1591

.444

.487

.559

.1848

.600

.2002

.700

.2578

.736

1905

.800

.1664

.850

.1025

.900

-.0386

.0486

.392

.0169

UPWT 1059 (IH4) 01-T15-18N16 ORB. LOWER WING

(RQ3LAB)

MACH (3) = 3.700 ALPHA (2) = -5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE (P/CPS)

2Y/BW .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 .9500 .9980

X/CW

.302

.428

.444

.487

.559

.600

.700

.736

.800

.850

.900

.0265

.0367

.0237

.0117

.1103

.1274

.0941

.0739

.1739

.0826

.0573

-.0167

.0300

.0337

-.0109

MACH (3) = 3.700 ALPHA (3) = .000 PINF = .32922 Q(PSI) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE C_p/CPS

2Y/BW .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 .9500 .9980

X/CW

.000

.001

.002

.003

.004

.005

.025

.045

.100

.153

.177

.200

.299

.302

.428

.444

.487

.559

.600

.700

.736

.800

.850

.900

.0095 -.0043

.1457

.2318

.2815

.3361

-.0115

.0343

.0055

.3337

.0764

.0161

.0531

.0086

.0129

.0426

.0112

.0034

.0533

.0573

.0003

.0050

-.0081

-.0013

.0071

.0230

.0432

-.0054

.0675

.1093

.0853

.1003

.1296

.1088

.0760

-.0084

.0413

.0477

-.0143

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UPWT 1059 (IH4) 01-T15-S11N16 ORB. LOWER WING

(RQ3LAB)

MACH (3) = 3.700 ALPHA (4) = 5.000 PINF = .32912 Q(P51) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CF/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.3135		.3829		-.0288
.001		-.0083	-.0114		.2310	.0844	.3553	.1196		
.002						.0437		.0864		
.003						.3552		.3520		
.004						.1400		.1812		
.005						.0590		.0950		
.025				.0180	.0625		.0916			
.045				.0284						
.100						.0359		.0951	.1041	
.153	-.0057									
.177					.0221					
.200				.0079						
.299	-.0101									
.302				.0200			.0754			
.428						.0451				
.444	-.0080									
.487					.0951					
.559				.1224						
.600						.0751				
.700						.1591				
.736	.1206									
.800						.1574				
.850						.1109				
.900				-.0114		.0655	.0619		.0074	

MACH (4) = 4.600 ALPHA (1) = -10.000 PINF = .16565 Q(P51) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CF/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.3593		.4339		.0117
.001		.0465	.0358		.2500	.0677	.3227	.0600		
.002						.0300		.0371		
.003						.5630		.5640		
.004						.1251		.0937		
.005						.0446		.0422		
.025				.0362	.0377		.0443			
.045				.0366						
.100						.0243		.0417	.0472	
.153	.0490									
.177					.0240					
.200				.0254						
.299	.0321									

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01-T15-SB.116 ORB. LOWER WING

(R03LAB)

MACH : 4.600 ALPHA (1) = -10.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP' CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.302				.0385			.0401			
.428						.0385				
.444	.0328									
.487					.0828					
.559				.1823						
.600						.0973				
.700						.1234				
.736	.2291									
.800						.1101				
.850						.0809				
.900				.0102		.0502	.0357		.0075	

MACH (4) = 4.600 ALPHA (2) = -5.000 PINF = .16565 Q(PSI) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP' CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.2597		.3832		.0069
.001		.0362	.0208		.1715	.0483	.304	.0579		
.002						.0194		.0357		
.003						.3878		.4634		
.004						.0936		.0938		
.005						.0300		.0408		
.025				.0234	.0289		.0476			
.045				.0227						
.100						.0142		.0395	.0465	
.153	.0322									
.177					.0097					
.200				.0057						
.299	.0175									
.302				.0135			.0185			
.428						.0384				
.444	.0168									
.487					.0519					
.559				.1028						
.600						.0704				
.700						.0475				
.736	.1489									
.800						.0708				
.850						.0545				
.900				-.0080		.0335	.0285		.0040	

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UPWT 1059 (IH4) 01-T:5-SBN16 ORB. LOWER WING

(RQ3LAB)

MACH (4) = 4.600 ALPHA (3) = .000 PINF = .16565 Q(PSI) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/8W	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CH

.000				.2557		.3479		- .0018
.001	.0154	.0051	.1570	.0532	.2812	.0710		
.002				.0216		.0508		
.003				.3305		.3872		
.004				.0993		.1082		
.005				.0337		.0508		
.025			.0158	.0334	.0602			
.045			.0158					
.100				.0167		.0539	.0576	
.153	.0117							
.177			.0127					
.200			.0026					
.299	.0033							
.302			.0134		.0316			
.428				.0410				
.444	.0030							
.487			.0454					
.559			.0720					
.600				.0461				
.700				.0299				
.736	.1044							
.800				.0421				
.850				.0449				
.900			.0066	.0360	.0213			- .0069

MACH (4) = 4.600 ALPHA (4) = 5.000 PINF = .16565 Q(PSI) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000				.2981		.3818		
.001	.0016	-.0032		.1925	.0896	.3664	.1358	-.0131
.002					.0520		.1023	
.003					.3325		.3510	
.004					.1448		.1827	
.005					.0686		.1116	
.025			.0196	.0612		.1183		
.045			.0211					
.100					.0518		.1061	.0958
.153	.0042							
.177				.0212				
.200			.0064					
.299	-.0036							

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01-T15-S8N16 ORB. LOWER WING

(RQ3LAB)

MACH (4) = 4.600 ALPHA (4) = 5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.302				.0126			.0612			
.428						.0333				
.444	-.0040									
.487					.0633					
.559				.0964						
.600						.0557				
.700						.0763				
.736	.0968									
.800						.0837				
.850						.0622				
.900				.0004		.0395	.0334		.0101	

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UPWT 1059 (IH4) 01-T12-SBN16 ORB. VERT. TAIL

(RQ3VAB) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 BETA = .000

MACH (1) = 2.360 ALPHA (1) = .000 PINF = 1.1969 Q(PSI) = 4.6665 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3966 .3882 .2930 .3798
 .300 .1268 .1203 .0930
 .500 .0933
 .700 -.0459
 .900 -.0646 -.0570 -.0400

MACH (1) = 2.360 ALPHA (2) = 5.000 PINF = 1.1969 Q(PSI) = 4.6665 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3272 .3133 .2181 .2925
 .300 .0941 .0885 .0698
 .500 .0638
 .700 -.0581
 .900 -.0756 -.0687 -.0542

MACH (2) = 2.950 ALPHA (1) = .000 PINF = .66345 Q(PSI) = 4.0415 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .4105 .3900 .3213 .4047
 .300 .1350 .0826 .0576
 .500 .1043
 .700 -.0078
 .900 -.0321 -.0206 -.0088

UPWT 1059 (IH4) 01-T15-S8N16 ORB. VERT. TAIL

(RQ3VAB)

MACH (2) = 2.950 ALPHA (2) = 5.000 PINF = .65345 Q(P51) = 4.0415 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CP5

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3244	.3182	.2387	.3047
.300	.0979	.0400	.0217	
.500		.0596		
.700		-.0238		
.900	-.0459	-.0348	-.0289	

MACH (3) = 3.700 ALPHA (1) = -10.000 PINF = .32922 Q(P51) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CP5

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.4218	.6110	.5043	.6671
.300	.2113	.1123	.0857	
.500		.1538		
.700		.0407		
.900	.0169	.0254	.0086	

MACH (3) = 3.700 ALPHA (2) = -5.000 PINF = .32922 Q(P51) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CP5

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.4939	.4105	.3799	.5054
.300	.1256	.0732	.0537	
.500		.1103		
.700		.0320		
.900	-.0010	.0197	-.0014	

MACH (3) = 3.700 ALPHA (3) = .000 PINF = .32922 Q(P51) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CP5

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.4177	.3404	.3009	.3649
.300	.0862	.0576	.0342	
.500		.0666		
.700		.0101		
.900	-.0125	.0016	-.0087	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 69

UPWT 1059 (IH4) 01-T15-48N16 ORB. VERT. TAIL

(RQ3VAB)

MACH (2) = 3.700 ALPHA (4) = 5.000 PINF = .32022 Q(PSI) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE (P/CPS)

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3320	.3120	.2343	.2841
.300	.0500	.0342	.0310	
.500		.0391		
.700		-.0081		
.900	-.0265	-.0140	-.0199	

MACH (4) = 4.600 ALPHA (1) = -10.000 PINF = .16565 Q(PSI) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.4103	.6439	.5563	.7397
.300	.1311	.0869	.0817	
.500		.0978		
.700		.0321		
.900	.0204	.0245	.0066	

MACH (4) = 4.600 ALPHA (2) = -5.000 PINF = .16565 Q(PSI) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE C²/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3963	.3623	.3747	.5212
.300	.0732	.0593	.0483	
.500		.0690		
.700		.0272		
.900	.0055	.0200	.0012	

MACH (4) = 4.600 ALPHA (3) = .000 PINF = .16565 Q(PSI) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE C²/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3726	.3498	.2360	.3491
.300	.0545	.0321	.0259	
.500		.0323		
.700		-.0019		
.900	-.0058	-.0051	-.0100	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 70

UPWT 1059 (IH4) 01-T15-SIN16 ORB. VERT. TAIL

(RQ3VAB)

MACH (4) = 4.600 ALPHA (4) = 5.000 PINF = .16535 Q(PSI) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3024	.2657	.1905	.2654
.300	.0358	.0205	.0135	
.500		.0200		
.700		-.0105		
.900	-.0157	-.0137	-.0161	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 71

UPWT 1059 (IH4) 01-T15-S9416 EXTERNAL TANK

(RQ3TAB) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 BETA = .000

MACH (1) = 2.360 ALPHA (1) = .000 PINF = 1.1969 Q(PSI) = 4.6665 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT	.0000	.0050	.0100	.0400	.0800	.1500	.2000	.2500	.2750	.3000	.3250	.3350	.3500	.3750	.4000
THETA															
.000				.3917	.2313	.0531									.0517
45.000															.0125
67.500															-.0920
90.000															-.0996
112.500															-.0797
135.000															.0231
157.500															.1119
167.000															.1138
180.000	.9867	.7784	.6727	.4028	.2485	.0634	-.0154	-.0296					.0814	.1018	.1100
197.000					.2538	.0747									
210.000						.0703									.0892
220.000															.0822
225.000															
232.000													.1056		.0008
X/LT	.4250	.4500	.4750	.5000	.5250	.5500	.5750	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
THETA															
.000															
45.000															.0558
67.500															.1077
90.000															.1011
112.500															.1771
135.000															.1756
157.500															.1612
167.000															.2095
180.000	.1420	.1595	-.0048	.0370		.0049									
197.000	.1396														
210.000		.0451		.0330		-.0258									
220.000															
225.000															
232.000															
X/LT	.9250	.9350	.9370	.9750											
THETA															
123.000	.2101														

ORIGINAL
 OF POOR QUALITY

UPWT 1059 (IH4) 01-T:5-SBN16 EXTERNAL TANK

(RQ3TAB)

MACH (1) = 2.360 ALPHA (1) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

151.000	.2798		
180.000		.3147	-.0903
210.000		.3794	

MACH (1) = 2.360 ALPHA (2) = 5.000 PINF = 1.1969 Q(PSI) = 4.6665 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000														
45.000			.4814	.3042	.1008									.0579
67.500									.0010			.0029		.0818
90.000									.2289	.6894		-.0670		-.0972
112.500							-.0232	-.0201	-.0221	.2082		-.0832		-.1171
135.000									-.0285	-.0339				
157.500												-.0070	.0150	-.0254
167.000														.0774
180.000	.9882	.6935	.6577	.3141	.1796	.0235	-.0423	-.0520		-.0403			.0620	.0634
197.000					.1903	.0347				-.0430				
210.000						.0334								.0961
220.000														-.0049
225.000												.0117		
232.000														-.0418

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000														
45.000								.0092				.0051		
67.500								.0013				.0032		.0614
90.000								.0335	.0245	.0160	.0085	.0037		.0956
112.500		-.0885				.0596		.0433		.0119	.0030	-.0065	.1055	.1373
123.000		-.1003				.0301		.0211	.0140	.0037	-.0048	-.0020	.1158	.1803
135.000													.0944	.2129
157.500	.1053	.0005		-.0127		-.0400		.0054	.0046	-.0033	-.0017	.0100	.1597	.2097
161.000	.1043	.1124	-.0190	-.0001		-.0167		-.0311	-.0232	-.0159	.0125	.0578	.1361	.2617
166.000														
180.000	.3329	.1272	.0280	-.0228	.0098	.0084	-.0101	-.0195	-.0300	-.0359	.0193	.0672	.1824	.2735
197.000				.0065						-.0349				.2735
210.000														
220.000				.0549				-.0183				.0103		
232.000								.0119				.0086		

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 73

UPWT 1059 (IH4) 01-T15-SBN16 EXTERNAL TANK

(RQ3TAB)

MACH (1) = 2.360 ALPHA (2) = 5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .2250

151.000

.3124

180.000

.3306

-.0877

210.000

.4202

MACH (2) = 2.950 ALPHA (1) = .000 PINF = .66345 Q(PSI) = 4.0415 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000

.3754

.2223

.0565

.0249

45.000

.0315

67.500

-.0049

-.0089

-.0444

90.000

-.0087

-.0170

-.0074

.2035

.6108

-.0068

-.0450

112.500

-.0093

-.0066

.0811

.0039

-.0422

135.000

.0045

.0507

.0053

.0138

157.500

.0925

167.000

.0933

180.000

.9861

.7102

.7064

.3628

.2210

.0571

-.0057

-.0189

-.0189

-.0061

.0771

.0898

197.000

.2244

.0674

-.0157

210.000

.0655

.0492

220.000

-.0058

225.000

.0709

232.000

.0523

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000

.0043

-.0125

.0102

45.000

-.0219

-.0026

.0573

67.500

-.0452

.0061

.0062

.0020

-.0045

-.0058

.0997

90.000

-.0569

-.0503

.0026

.0117

-.0177

-.0196

-.0200

-.0214

.1344

112.500

-.0503

-.0357

-.0227

.0458

.0387

.0277

.0233

.0142

.0119

.0540

.1260

123.000

135.000

.0113

.0463

.0083

.0045

-.0041

.0170

.0128

.0046

.0963

.1069

157.500

.1031

.1174

.0281

.0715

.0073

.0201

.0009

-.0100

-.0175

.0215

.0627

.1383

161.000

.1058

166.000

.0752

.0015

180.000

.1953

.1916

.0701

.0369

.0117

.0336

.0603

.0358

.0223

-.0002

-.0149

.0078

.0846

.1490

197.000

.0755

-.0018

210.000

.0290

-.0036

220.000

.0739

.0283

232.000

-.0209

.0076

UPWT 1059 (IH4) 01-T15-SBN16 EXTERNAL TANK

(RQ3TAB)

MACH (1) = 2.950 ALPHA (1) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000	.1809			
151.000		.1536		
180.000			.1807	-.0548
210.000			.3289	

MACH (2) = 2.950 ALPHA (2) = 5.000 PINF = .56345 Q(PSI) = 4.0415 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000					.4536	.2898	.1012								.0550
45.000															.0203
67.500									.0090			.0366			-.0084
90.000								-.0097	-.0093	-.0095	.2103	.5741		-.0148	-.0450
112.500										-.0169	-.0233	.1284		-.0375	-.0671
135.000												-.0046		.0071	-.0093
157.500															.0479
167.000															.0463
180.000	.9779	.6245	.6074	.2710	.1622	.0288	-.0238	-.0337		-.0153		.0274	.0310		.0490
197.000					.1708	.0375				-.0263					
210.000						.0378									.0411
220.000															-.0230
225.000												.0438			
232.000															.0137

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000								.0188				.0034			
45.000								.0056				.0139			.0098
67.500						-.0131		.0025	.0205	.0224	.0173	.0123			.0786
90.000		-.0509				-.0497		.0329		.0247	.0142	.0100	.0279		.1405
112.500		-.0671				-.0537		.0156	.0205	.0153	.0104	.0066	.0495		.1346
123.000													.0092	.0939	.1418
135.000		-.0144				.0092		-.0129	.0021	.0088	.0047	.0069	.1170		.1339
157.500	.0573	.0795	.0044		.0375	-.0041		-.0002	-.0166	-.0217	-.0014	.0462	.0854		.1541
161.000	.0687														
165.000					.0334					-.0150					
180.000	.2238	.1560	.0530		-.0076	.0296	.0203	.0073	-.0043	-.0155	-.0058	.0426	.0919		.1659
197.000					.0343					-.0156					.1919
210.000								.0015				.0049			
220.000					.0345					.0198					
232.000								.0082				.0126			

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01-T15-38N16 EXTERNAL TANK

(RQ3TAB)

MACH (2) = 2.950 ALPHA (2) = 5.000

SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE P/CP5

X/LT .9250 .9350 .9370 .9750

THETA
 123.000 .1819
 151.000 .1745
 180.000 .1879 -.0550
 210.000 .3372

MACH (3) = 3.700 ALPHA (1) = -10.000 PINF = .32322 Q(P51) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE P/CP5

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2100 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA
 .000 .1944 .0896 -.0039
 45.000
 67.500
 90.000 -.0029 -.0076 -.0001 .1816 .4385 -.0422
 112.500 .0239 .0252 .1147 .0604
 135.000 .0428 .0436 .0329 .0145
 157.500 .1193
 167.000 .1363
 180.000 .9669 .8541 .7386 .5346 .3543 .1474 .0624 .0372 .0352 .0348 .0423 .1691
 197.000 .3450 .1612
 210.000 .1477
 220.000
 225.000 .1029
 232.000 .1246
 .1029
 .1280

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA
 .000
 45.000 -.0192
 67.500 -.0431
 90.000 -.0380 -.0407 -.0357 -.0277 -.0271
 112.500 -.0129 -.0095 .0164 .0416 .0631 .0558 .0423 -.0005
 123.000 .0334 .0497 .0897 .0855 .0448 .0503 .0428 .0913
 135.000 .0990 .1091 .0572 .0458 .0472 .0642 .0562 .0454 .1163
 157.500 .1507 .1858 .0632 .0646 .0495 .0699 .0449 .0448 .0503 .0428 .0913
 161.000 .1356
 165.000 .0239
 180.000 .3550 .2453 .0615 .0871 .0458 .0711 .0529 .0383 .0617 .0439 .0465 .0343 .1396
 197.000 .0379
 210.000 .0704
 220.000 .9026
 232.000 .0530 .0632 .0513 .0411

UPWT 1059 (IH4) 01-T15-99N16 EXTERNAL TANK

(RQ3TAB)

MACH (3) = 3.700 ALPHA (1) = -10.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE C²/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000	.1987			
151.000		.3214		
180.000			.2753	-.0204
210.000			.3247	

MACH (3) = 3.700 ALPHA (2) = -5.000 PINF = .32932 Q(PS1) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE C²/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2030 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000			.2645	.1404	.0204									.0018
45.000														-.0161
67.500														-.0385
90.000							.0016	-.0072	-.0011	.1410	.4623		-.0230	-.0184
112.500									.0067	.0123		.0126		-.0174
135.000											.0110	.0620		-.0128
157.500											.0198	.0150	-.0029	.0782
167.000														.0799
180.000	.9812	.7717	.7295	.4427	.2808	.0968	.0243	.0109		.0170			.0303	.0577
197.000					.2767	.1090				.0105				.0829
210.000						.1018								.0775
220.000														.0532
225.000												.0703		.1099
232.000														

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000								-.0074				-.0170		
45.000								-.0316				-.0210		.0026
67.500				-.0446				-.0323	-.0315	-.0254	-.0199	-.0153		.0037
90.000		-.0267		-.0299		-.0240		.0048		.0075	.0015	-.0001	-.0072	.0220
112.500		-.0037		.0013		.0160		.0265	.0468	.0546	.0385	.0324	.0286	.0526
123.000													.0073	.0972
135.000				.0948		.0478		.0150	.0203	.0239	.0296	.0224	.0679	.0947
157.500	.0973	.1212	.0519	.0754		.0286		.0349	.0274	.0198	.0098	.0135	.0565	.1242
161.000	.1017													
166.000				.0536										
180.000	.1984	.2322	.0430	.0631	.0245	.0430	.0378	.0354	.0426		.0178	.0050	.0912	.1422
197.000				.0498						.0311				.1470
210.000								.0391				.0194		
220.000				.8397						.0371				
232.000								.0210				.0217		

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 77

UPWT 1059 (IH4) 01-T15-SEN16 EXTERNAL TANK

(RQ3TAB)

MACH (3) = 3.700 ALPHA (2) = -5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CF/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .1486

151.000 .1699

180.000 .1644 -.0353

210.000 .2882

MACH (3) = 3.700 ALPHA (3) = .000 PINF = .32922 Q(P51) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000 .3415 .2008 .0512 .0150

45.000 .0005

67.500 .0218

90.000 .0125

112.500 -.0167

135.000 -.0020

157.500 .0407

167.000 .0486

180.000 .9785 .6607 .7141 .3451 .2102 .0571 .0034 .0019 .0019 .0170 .0331 .0492

197.000 .2095 .0646 .0022

210.000 .0623

220.000 .0462

225.000 .0228

232.000 .0986

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000 -.0044 -.0101

45.000 -.0159 -.0045 .0201

67.500 -.0317 -.0102 -.0024 -.0029 -.0083 -.0059 .0469

90.000 -.0307 -.0341 -.0218 .0004 -.0077 -.0096 -.0105 -.0053 .0777

112.500 -.0274 -.0258 -.0189 .0041 .0131 .0244 .0190 .0163 .0146 .1039

123.000 .0033 .0545 .0989

135.000 .0202 .0561 .0197 .0021 .0036 -.0010 .0060 .0043 .0581 .0912

157.500 .0503 .0791 .0259 .0516 .0108 .0174 .0034 -.0001 -.0095 .0018 .0288 .0979

161.000 .0736

166.000 .0571

180.000 .1480 .1778 .0578 .0379 .0112 .0269 .0252 .0161 .0234 .0126 -.0016 -.0130 .0597 .1206

197.000 .0702 .0108 .0127

210.000 .0169 .0136 -.0018

220.000 .7785 -.0071 .0051

232.000

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UPWT 1059 (IH4) 01-T15-SBN16 EXTERNAL TANK

(RQ3TAB)

MACH (3) = 3.700 ALPHA (3) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000	.1194			
151.000		.1281		
180.000			.1767	-.0357
210.000			.2111	

MACH (3) = 3.700 ALPHA (4) = 5.000 PINF = .32922 Q(PSI) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000															.0423
45.000				.4285	.2716	.0969									-.0146
67.500									.0128			.0472			.0080
90.000							.0003	-.0051	-.0003	.1238	.4158	.0221			-.0102
112.500									-.0048	.0051	.0192	-.0110			-.0347
135.000											-.0027	-.0046	-.0014		-.0006
157.500															.0323
167.000															.0255
180.000	.9786	.6122	.5531	.2507	.1498	.0272	-.0105	-.0030		-.0060		-.0002	.0077		.0327
197.000					.1536	.0335				-.0043					
210.000						.0337									.0317
220.000															-.0036
225.000												.0221			
232.000															.0515

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000								.0166				.0068			
45.000								.0090				.0059			.0161
67.500								-.0003	.0024	.0057	.0088	.0125			.0296
90.000		-.0254						-.0163		.0045	.0164	.0173	.0117		.0916
112.500		-.0353						-.0094	.0007	.0078	.0131	.0143	.0146		.1018
123.000													.0064	.0651	.0949
135.000		-.0150						-.0070	-.0067	-.0026	-.0025	-.0023	.0685		.0871
157.500	.0272	.0306	.0169	.0221		.0118		.0028	-.0075	-.0137	-.0188	.0078	.0318		.0972
161.000	.0224														
166.000						.0149				-.0039					
180.000	.1398	.1102	.0180		.0166	.0217	.0227	.0134	.0038	-.0036	-.0178	-.0016	.0606		.1029
197.000						.0241				-.0054					.0999
210.000								.0051				-.0083			
220.000						.7191				.0012					
232.000								-.0246				-.0009			

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 79

UPWT 1059 (IH4) 01-T1E-58N16 EXTERNAL TANK

(RQ3TAB)

MACH (3) = 3.700 ALPHA (4) = 5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .1167

151.000 .1176

180.000 .1363 -.0376

210.000 .1975

MACH (4) = 4.600 ALPHA (1) = -10.000 PINF = .15565 Q(PSI) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000 .1696 .0769 .0002 -.0083

45.000 -.0277

67.500 -.0249

90.000 .3018 -.0014 .0051 .1217 .3776 -.0194 .0234 .0003

112.500 .0187 .0268 .0282 .1030 .0578

135.000 .0411 .0360 .0261 .0238

157.500 .0986

167.000 .0999

180.000 .8814 .7779 .7007 .4897 .3294 .1349 .1585 .0365 .0317 .0347 .0557 .1274

197.000 .3196 .1457 .0325

210.000 .1341 .0938

220.000 .0693

225.000 .0754

232.000 .1340

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000 -.0083

45.000 -.0282

67.500 -.0172 -.0242 -.0242 -.0207 -.0193 -.0118

90.000 -.0014 -.0007 .0081 .0358 .0296 .0209 .0107 .0090 .0327

112.500 .0333 .0374 .0629 .0611 .0841 .0668 .0519 .0470 .0408 .0907

123.000 .0894 .1162 .0683 .0479 .0421 .0513 .0587 .0467 .0226 .0551 .1395

135.000 .1082 .1314 .0505 .0522 .0478 .0696 .0309 .0392 .0342 .0407 .0904 .1240

157.500 .0999

161.000 .0382

166.000 .0741 .0579 .0588 .0540 .0343 .0283 .0454 .0407 .0336 .1126 .1849

180.000 .0483

197.000 .0641 .0477 .0415 .1793

210.000 .5723

220.000 .0569

232.000 .0375 .0374

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 80

UPWT 1059 (1H4) 01-T15-SBN16 EXTERNAL TANK

(RQ3TAB)

MACH (4) = 4.600 ALPHA (1) = -10.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .1735

151.000 .2568

180.000 .2145 -.0105

210.000 .3080

MACH (4) = 4.600 ALPHA (2) = -5.000 PINF = .16565 Q(PSI) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000 .2533 .1360 .0236 .0071

45.000 .0115

67.500 .0200

90.000 .0003

112.500 -.0026 .0003 .0051 .0873 .4395 .0287 .0225

135.000 .0119 .0167 .0146 .0551 .0057

157.500 .0208 .0232 .0044 .0691

167.000 .0604

180.000 .9744 .7264 .7476 .4194 .2655 .0901 .0390 .0141 .0241 .0290 .0485 .0543

197.000 .2587 .0990 .0220 .0744

210.000 .0922 .0569

220.000 .1325

225.000 .0517

232.000 .1325

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000 -.0050 -.0052

45.000 -.0213 -.0205

67.500 -.0248 -.0159

90.000 -.0104 -.0145 -.0135 -.0149 -.0207 -.0213 -.0168 -.0159

112.500 .0044 .0064 .0085 .0028 .0273 .0275 .0460 .0399 .0337 .0302 .0386

123.000 .0044 .0064 .0085 .0028 .0273 .0275 .0460 .0399 .0337 .0302 .0386

135.000 .0575 .0839 .0523 .0229 .0221 .0201 .0294 .0288 .0698 .0729

157.500 .0805 .1032 .0456 .0560 .0338 .0353 .0225 .0253 .0161 .0142 .0506 .1018

161.000 .0892

168.000 .0525

180.000 .1630 .2352 .0504 .0639 .0316 .0263 .0311 .0270 .0228 .0415 .0319 .0246 .0148 .0720 .1150

197.000 .0635 .0311 .0270 .0228 .0319 .0302 .0207 .1199

210.000 .5333

220.000 .0306 .0376

232.000 .0169 .0198

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 81

UPWT 1059 (IH4) 01-T15-18N16 EXTERNAL TANK

(RQ3TAB)

MACH (4) = 4.600 ALPHA (2) = -5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA
123.000 .1239
151.000 .1323
180.000 .1287 -.0215
210.000 .2854

MACH (4) = 4.600 ALPHA (3) = .000 PINF = .16165 Q(PST) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE (P/CPS)

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA
.000 .3386 .1999 .0544 .0199
45.000 .0070
67.500 .0091
90.000 .0007
112.500 .0057
135.000 .0093
157.500 .0616
167.000 .0355
180.000 .9793 .6557 .6834 .3288 .2026 .0552 .0032 .0132 .0106 .0136 .0215 .0359
197.000 .1990 .0637
210.000 .0613
220.000 .0372
225.000 .0224
232.000 .0346 .1166

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA
.000 -.0001 -.0005
45.000 -.0091 -.0047 .0079
67.500 -.0039 -.0057 -.0085 -.0069 -.0064 .0239
90.000 -.0149 -.0122 -.0126 -.0057 .0004 .0007 .0282
112.500 -.0078 -.0132 -.0095 -.0019 -.0029 .0046 .0131 .0178 .0190 .0574
123.000 .0205 .0304 .0209 .0112 .0067 .0071 .0038 .0017 .0046 .0210 .0690
135.000 .0372 .0389 .0289 .0298 .0285 .0176 .0080 .0083 .0027 -.0017 .0110 .0571
157.500 .0311 .0424 .0355 .0123 .0197 .0245 .0133 .0172 .0137 .0080 -.0012 .0309 .0963
161.000 .0485 .0534 .0169 .0153 .0147 .0023 .0926
165.000 .4936
180.000 .1472 .1389 .0485 .0355 .0123 .0197 .0245 .0133 .0172 .0137 .0080 -.0012 .0309 .0963
197.000 .0534 .0169 .0153 .0147 .0023 .0926
210.000 .4936
220.000 .0169 .0153 .0147 .0023 .0926
232.000 .0169 .0153 .0147 .0023 .0926

UPWT 1059 (IH4) 01-T15-SUN16 EXTERNAL TANK

(RQ3TAB)

MACH (4) = 4.600 ALPHA (3) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA
123.000 .0994
151.000 .1200
180.000 .1343 -.0230
210.000 .1872

MACH (4) = 4.600 ALPHA (4) = 5.000 PINF = .16565 Q(PSI) = 2.4532 RN/L = 3.0000 CPST6 = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2010 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA
.000 .4319 .2747 .0935 .0366
45.000 .0054
67.500 .0178
90.000 .0059
112.500 .0019 .0024 .0065 .0774 .3776 .0549 .0352 .0163
135.000 .0031 .0028 .0059 .0006 .0035 .0045 .0038
157.500 .0024 .0035 .0045 .0603
167.000 .0171
180.000 .9843 .6140 .5238 .2346 .1440 .0285 .0007 .0049 .0036 .0032 .0045 .0285
197.000 .1455 .0359 .0345
210.000 .0132
220.000 .0032
225.000 .0232
232.000 .0651

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA
.000 .0171 .0094
45.000 .0096 .0050 .0191
67.500 .0078 .0054 .0064 .0081 .0085 .0313
90.000 -.0098 -.0122 -.0091 -.0074 -.0028 -.0023 .0018 .0081 .0558
112.500 -.0160 -.0163 -.0163 -.0062 -.0077 -.0036 .0015 .0057 .0157 .0664
123.000 .0140 .0221 .0593
135.000 -.0081 -.0180 -.0183 -.0100 -.0048 .0019 .0022 -.0027 .0357 .0616
157.500 .0097 .0080 .0136 .0101 .0180 .0081 -.0002 -.0054 -.0114 -.0093 .0092 .0673
161.000 .0014
166.000 .0180
180.000 .1289 .0730 .0324 .0084 .0224 .0263 .0250 .0143 .0062 -.0005 -.0014 -.0099 -.0108 .0326 .0784
197.000 .0241 .0037 -.0037 .0082 .0814
210.000 .0046 .0044
220.000 .4566 -.0170
232.000 -.0057

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 83

UPWT 1059 (1H4) 01-T15-SB-116 EXTERNAL TANK

(RQ3TAB)

MACH (4) = 4.600 ALPHA (4) = 5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP' CPS

X/LT .9250 .9350 .9370 .9750

THETA -

123.000 .0896

151.000 .0926

180.000 .0879 -.0266

210.000 .1337

ORIGINAL PAGE IS
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TABULATED SOURCE DATA - IH4

PAGE 84

UPWT 1059 (IH4) 01-T15-SBN16 SOLID RCKT. BSTR.

(RQ3SAB) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 BETA = .000

MACH (1) = 2.360 ALPHA (1) = .000 PINF = 1.1969 Q(PSI) = 4.6665 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/PS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.0067		.1187	.1212		.1207							-.0201		
180.000			.1257			.1275					-.0356		.0585		
225.000										-.0217			.0565		-.0009
247.500											-.0277		.0411	.0039	-.0075
260.000								.6452							
270.000		.2264	.1342	.0812	.1379	.7016	.8182		-.0887	-.0660	-.1005	-.0250	-.0301	-.0341	-.0371
315.000												-.0568			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	-.0033	.0639	-.0363					.1065				.0952			
180.000	-.0137	.2932	.1740	-.0289				.1095			.0419	-.0200			
210.000					-.0293	.2730		-.0078		-.0700					
215.000							-.0476		-.1073						
225.000		.4958	-.0590	-.0872				-.0230			-.1280				
240.000								-.0290			-.0816				
247.500	.0676										-.0572	-.0497			
270.000	.0411	.2842	-.0686	-.0618				-.0262					.1257		
315.000	-.0144														

MACH (1) = 2.350 ALPHA (2) = 5.000 PINF = 1.1969 Q(PSI) = 4.6665 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/PS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	.9933		.1074	.1125		.1129							-.0346		
180.000				.0658		.0646					-.0610		.0422		
225.000										-.0925			.0245		-.0075
247.500											-.0373		.0431	.0111	-.0053
260.000								.5553							
270.000		.2273	.1334	.0783	.1301	.6738	.8167		-.0882	-.0960	-.0965	-.0692	.0400	.0148	-.0013
315.000												-.0199			

TABULATED SOURCE DATA - IH4

{RQ35AB}

UPWT 1059 (IH4) 01-T15-S8N15 SOLID RCKT. BSTR.

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

PSI

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

PSI

PSI

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 86

UPWT 1059 (IH4) 01-T15-S8N16 SOLID RCKT. BSTR.

(RQ3SAB)

MACH (2) = 2.950 ALPHA (2) = 5.000 PINF = .66345 Q(PSI) = 4.0415 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.0677		.1014	.1057		.1082							-.0224		
180.000				.0716		.0604							.0102		
225.000													.0046		.0098
247.500											-.0442		.0344	.0254	.0123
260.000								.5872				-.0578			
270.000		.2539	.1547	.0923	.1271	.1703	.5878		-.0242	-.0390	-.0482	-.0460	.0196	.0256	.0129
315.000												-.0102			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	.0078	.0971	-.0013					.0782				.0381			
180.000	.0044	.2582	.0506	.0215				.1077			.0881	.0436			
210.000					-.0061	.1732		.0224							
215.000							-.0448		-.0690	-.0203					
225.000		.1724	.0631	-.0427				-.0063			-.0764				
240.000								-.0293			-.0399				
247.500	.0729										-.0469	-.0364			
270.000	.0575	.1469	-.0454	-.0500				-.0285				.0640			
315.000	.0011														

MACH (3) = 3.700 ALPHA (1) = -10.000 PINF = .32922 Q(PSI) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.1497		.0983	.0905		.0932							-.0364		
180.000				.2797		.2436					.0521		.1008		
225.000										.0605			.1005		.0478
247.500											.0254		.1049	.0619	.0377
260.000								.9875							
270.000		.2845	.1734	.1052	.0847	.1829	.5464		-.0084	-.0208	-.0148	-.0098	.0332	.0132	-.0048
315.000												-.0431			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	-.0366	.0089	-.0359					-.0118				-.0285			
180.000	.0278	.2032	.2223	.0276				.1110			.0533	.0145			
210.000					.0499	.2512		.0382		.0009					
215.000							.0340		-.0268		-.0415				
225.000		.3139	.0809	-.0128				.0401			-.0212				
240.000								-.0071			-.0303	-.0393			

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 87

UPWT 1059 (IH4) 01-T15-38N16 SOLID RCKT. BSTR.

(RQ3SAB)

MACH (3) = 3.700 ALPHA (1) = -10.000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9150	.9300	.9400	.9500	.9600	.9900
PSI												
247.500	.0304											
270.000	-.0061	.2857	-.0285	-.0410								
315.000	-.0303											

PSI

247.500

270.000

315.000

MACH (3) = 3.700 ALPHA (2) = -5.000 PINF = .32922 Q(PSI) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE (P/CPS)

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.1922		.1035	.1015		.1027									
180.000				.2034		.1703									
225.000										.0365					
247.500															
260.000															
270.000															
315.000															

PSI

90.000

180.000

225.000

247.500

260.000

270.000

315.000

MACH (3) = 3.700 ALPHA (3) = .000 PINF = .32922 Q(PSI) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.2003		.1050	.1059		.1063									
180.000				.1356		.1076									
225.000															
247.500															
260.000															
270.000															
315.000															

PSI

90.000

180.000

225.000

247.500

260.000

270.000

315.000

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 88

UPWT 1059 (1H4) 01-T15-S3N16 SOLID RCKT. BSTR.

(RQ3SAB)

MACH (3) = 3.700 ALPHA (3) = .000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1110	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

PS1
315.000

- .0297

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
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PS1

90.000	-.0073	.0807	-.0119		.0292		.0478
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180.000	.0042	.1441	.1653	.0167	.0519	.0549	.0277
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210.000	.0068	.1467	.0268	-.0046
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215.000				- .0076		- .0346		- .0456
275.000	1.737	2815	3399		3399			.0345

225.000	.4323	-.0019	-.0280	.0093	-.0246	
248.000				.0227	-.0273	-.0300

240.000			- .0227		- .0273	- .0300
247.500	0061					

270.000 .0079 2770 - 0231 - 0328 - 0237 .0383

270.000	.0079	.2770	-.0231	-.0328	-.0237	.0383
315.000	.0113					

MACH (3) = 3.700 ALPHA (4) = 5.000 PINF = .32922 Q(PSI) = 3.1550 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
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PSI

90.000	1.1769	.0980	.0995	.1012				- .0135
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180.000		.0807	.0639			-.0326	-.0101
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225.000		- .0138		- .0106	.0147
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247.500		- .0313	-.0159	.0030	.0194
255.000					

260,000							5573								
270,000	2514	1037	1005	1110	1701	1700		2001	2070	2103	2204	2105	2046	2173	

270.000	.2941	.1873	.1095	.1119	.1791	.4369		- .0091	- .0079	- .0182	- .0284	- .0185	- .0046	.0173
315.200											- .0053			

315.000 - .0039

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
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PSI

90.000	-.0017	.0942	.0256			.0602		.0542
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180.000	.0071	.0927	.0719	.0309	.0967	.1003	.0672
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210.000	.0026	.1829	.0320	.0028
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215.000				.0075	- .0330	- .0444
225.000	1.000	2.000	3.000			

225.000	.1825	.0275	-.0257	.0150	-.0203	
240.000				.0150	.0261	.0270

240.000			- .0176		- .0261	- .0236
247.500	0134					

[illegible]

270.000	.0116	.2067	-.0203	-.0358	-.0341	.0371
315.000	.0066					

913.000 .0000

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 89

UPWT 1059 (IH4) 01-T15-S8N16 SOLID RCKT. BSTR.

(RQ3SAB)

MACH (4) = 4.600 ALPHA (1) = -10.000 PINF = .16565 Q(PSI) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.2413		.0932	.0854		.0867							-.0238		
180.000				.2755		.2368					.0452		.0855		
225.000										.0691			.1027		.0442
247.500												.0254	.0805	.0694	.0412
260.000								.4501							
270.000		.3033	.1882	.1104	.0741	.1831	.2773		.0015	-.0025	.0010	-.0018	.0294	.0254	.0083
315.000												-.0253			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	-.0266	.0273	-.0204					.0008					-.0131		
180.000	.0324	.1680	.1442	.0327				.1002			.0689	.0352			
210.000					.0483	.2246		.0658		.0274					
215.000							.0480		-.0049		-.0196				
225.000		.2080	.0822	.0040				.0427			.0022				
240.000								.0016			-.0110	-.0178			
247.500	.0318												.0376		
270.000	.0035	.2589	-.0104	-.0269			-.0269								
315.000	-.0193														

MACH (4) = 4.600 ALPHA (2) = -5.000 PINF = .16565 Q(PSI) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.3350		.1012	.0969		.0979							-.0131		
180.000				.2054		.1665					.0102		.0050		
225.000										.0399			.0232		.0401
247.500												-.0024	.0185	.0472	.0360
260.000								.3187							
270.000		.3195	.1994	.1154	.0949	.1730	.2582		.0020	.0024	-.0049	-.0159	-.0115	.0111	.0023
315.000												-.0267			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	-.0141	.0380	-.0157					.0057					-.0014		
180.000	.0145	.1339	.1604	.0218				.0550			.0486	.0181			
210.000					.0231	.1715		.0458		.0062					
215.000							.038		-.0095		-.0218				
225.000		.1382	.1205	-.0092				.0246			-.0052				
240.000								-.0126			-.0147	-.0180			

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 90

UPWT 1059 (IH4) 01-T15-SBN16 SOLID RCKT. BSTR.

(RQ3SAB)

MACH (4) = 4.600 ALPHA (2) = -5.000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
PSI												
247.500	.0205											
270.000	-.0020	.2424	-.0078	-.0230				-.0194				.0373
315.000	-.0118											

PSI

247.500

270.000

315.000

MACH (4) = 4.600 ALPHA (3) = .000 PINF = .16565 Q(PSI) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.3707		.1058	.1048		.1044							-.0032		
180.000				.1415		.1088					-.0054		-.0075		
225.000										.0104			-.0112		.0198
247.500											-.0021		.0033	.0107	.0198
260.000															
270.000		.3359	.2103	.1201	.1249	.1760	.2634	.3217	.0025	.0250	-.0051	-.0112	-.0108	-.0108	-.0112
315.000											-.0193				

PSI

90.000

180.000

225.000

247.500

260.000

270.000

315.000

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
PSI												
90.000	.0005	.0890	-.0007					.0267				.0274
180.000	.0084	.1317	.1218	.0158				.0485			.0328	.0236
210.000					.0038	.1294		.0241		.0060		
215.000						.0072			-.0190			
225.000		.1886	.0199	-.0144			-.0060			-.0254		
240.000							-.0165			-.0147	-.0137	
247.500	.0151											
270.000	-.0004	.1886	-.0118	-.0211			-.0188				.0370	
315.000	-.0001											

PSI

90.000

180.000

210.000

215.000

225.000

240.000

247.500

270.000

315.000

MACH (4) = 4.600 ALPHA (4) = 5.000 PINF = .16565 Q(PSI) = 2.4532 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.3406		.0979	.0966		.0982							-.0119		
180.000				.0857		.0699					-.0204		-.0043		
225.000										-.0075			-.0091		.0019
247.500											-.0129	-.0102	-.0102	-.0022	
260.000								.3992							
270.000		.3394	.2137	.1206	.1158	.1823	.2850		.0056	.0067	-.0027	-.0126	-.0109	-.0109	-.0036

PSI

90.000

180.000

225.000

247.500

260.000

270.000

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 91

UPWT 1059 (IH4) 01-T15-S&N:6 SOLID RCKT. BSTR.

(RQ35AB)

MACH (4) = 4.600 ALPHA (4) = 5.000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
315.000												.0005			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	-.0067	.0793	.0135					.0424				.0399			
180.000	.0129	.0355	.0158	.0235				.0857			.0872	.0650			
210.000					-.0014	.1476		.0540							
215.000							.0137		-.0150	.0137					
225.000		.1507	.0273	-.0100				-.0005			-.0236				
240.000								-.0131			-.0017				
247.500	.0147										-.0116	-.0113			
270.000	.0088	.2438	-.0015	-.0235											
315.000	.0067							-.0221				.0371			

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

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UPWT 1059 (IH4) 01-T15-SBNI(6) ORBITER FUSELAGE

(RQ3BAC) (15 APR 76)

REFERENCE DATA

```
SREF = 2690.0000 SQ.FT.   XMRP = .0000 INCHES
LREF = 1290.3000 INCHES   YMRP = .0000 INCHES
BREF = 1290.3000 INCHES   ZMRP = .0000 INCHES
SCALE = .0100
```

PARAMETRIC DATA

RN/L = 5.000 BETA = .000

MACH (1) = 2.950 ALPHA (1) = .000 PINF = 1.1042 Q(PSI) = 6.7265 RN/L = 5.0200 CPSTG = 1.7529

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CFS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.8588	.4004	.1273	.1467		.1380	.2321	.8044		-.0334					
10.000								.3929							
20.000								.2128							
24.500								.1560							
39.000								.1187							
163.000														.3590	
174.000												.6339			
180.000	.8588				.2138			.1688	.1650	.1889	.5608		.6242		.5715
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0714	.0254	.0248	.0018	-.0269		.1610				-.0651		-.0723	-.0700	
23.000		.0172													
24.000	.0437														
31.500	.0420														
33.100		.0298													
35.000	.0335														
40.000	.0581	.0402													
45.000		.0433													
50.000	.0849														
51.600															
57.000		.0104											.0019		
60.900		.0135													
65.000		.0133													
68.000															
69.000		.0130													
79.300					-.0210										
95.500					-.0153		-.0128								
95.700		.0178													
96.300	.0495														
103.000					-.0135										
105.000															-.0554
112.600					-.0116										
117.500															
120.800									.0734						
127.900						.2895						-.0060		-.0029	
129.500								.2002							

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 93

UPWT 1059 (IH4) 01-T15-18N16 ORBITER FUSELAGE

(RQ3BAC)

MACH (1) = 2.950 ALPHA (1) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
130.000									.1300	.0242		.0068			
135.000		-.0425				-.0022									
139.500									.1468						
144.000												.0360			
155.000	.1347														
180.000	.0773	-.0166				.0069									

PHI
130.000
135.000
139.500
144.000
155.000
180.000

X/LB 1.0250 1.0500

PHI

.000 -.0634 -.0497

MACH (1) = 2.950 ALPHA (2) = 5.000 PINF = 1.1042 Q(PST) = 6.7266 RN/L = 5.0200 CPSTG = 1.7529

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.7667	.3723	.1820	.2918		.2532	.2270	.6245		-.0461					
10.000								.1909							
20.000								.1600							
24.500								.1401							
39.000								.1116							
163.000														.2745	
174.000															
180.000	.7667				.1517			.1110	.1092	.1270	.4258	.4978	.4848		.4463

PHI
.000
10.000
20.000
24.500
39.000
163.000
174.000
180.000

X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI

.000	.0530	.0224	.0013	-.0183	.0647		.1834				-.0621		-.0701	-.0695	
23.000		-.0021													
24.000	.0289														
31.500	.0111														
33.100		.0020													
35.000	-.0059														
40.000	.0292	.0044													
45.000		.0117													
50.000	.0829														
51.600															
57.000		-.0116											-.0207		
60.900		-.0128													
65.000		-.0155													
68.000														-.0353	

DATE 20 APR 75

TABULATED SOURCE DATA - IH4

PAGE 95

UPWT 1059 (IH4) 01-T15-S8'116 ORBITER FUSELAGE

(RQ3BAC)

MACH (2) = 3.700 ALPHA (1) = -5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
24.000	.0745														
31.500	.0790														
33.100		.0527													
35.000	.0751														
40.000	.0581	.0575													
45.000		.0622													
50.000	.0669														
51.600													.0148		
57.000		.0378													
60.900		.0373													
65.000		.0359													
68.000															
69.000		.0199													
79.300					.0150										
95.500					.0163		.0005								
95.700		.0083													
96.300	.0585														
103.000					.0182										
105.000															
112.600					.0176										
117.500															
120.800															
127.900						.1655				.1214					
129.500								.2197							
130.000															
135.000									.1879	.0654		.0263			
139.600					.0169				.1960						
144.000												.0608			
155.000	.2030														
180.000	.1477	.0135			.0081										
X/LB	.1.0250	1.0500													
PHI															
.000	-.0452	-.0425													

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OF POOR QUALITY

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 96

UPWT 1059 (1H4) 01-T15-S8M16 ORBITER FUSELAGE

(RQ3BAC)

MACH (2) = 3.700 ALPHA (2) = .000 PINF = .54730 Q(PSI) = 5.2448 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 97

UPWT 1059 (IH4) 01-T15-SBN16 ORBITER FUSELAGE

(RQ3BAC)

MACH (2) = 3.700 ALPHA (2) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0500

PHI

.000 -.0387 -.0348

MACH (3) = 4.600 ALPHA (1) = -5.000 PINF = .27620 Q(PSI) = 4.0904 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 .1250 .1500 .1600 .1650 .1700 .1750 .1800

PHI

.000	1.1587	.5133	.1656	.1535		.1498	.0892	.5814		.0384				
10.000								.3536						
20.000								.0846						
24.500								.0916						
39.000								.0980						

163.000													.5339	
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174.000	1.1587				.3127			.2493	.2454	.2769	.8173	.9850	.9616	.8831
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X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI

.000	.1034	.0353	.0471	.0477	.0222		.1478				-.0160		-.0265	-.0265
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23.000		.0336												
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24.000	.0600													
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31.500	.0523													
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33.100		.0329												
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35.000	.0472													
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40.000	.0499	.0325												
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45.000		.0349												
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50.000	.0628													
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51.600														
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57.000		.0244												
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60.900		.0200												
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65.000		.0181												
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68.000														
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69.000		.0142												
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79.300					.0168									
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95.500					.0187		.0082							
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95.700		.0127												
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96.300	.0603													
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103.000					.0169									
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105.000														
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112.600					.0092									
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117.500														
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120.800														
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.1376

.0247

.0245

-.0246

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 98

UPWT 1059 (IH4) 01-T15-S8N16 ORBITER FUSELAGE

(RQ3BAC)

MACH (3) = 4.600 ALPHA (1) = -5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
127.900						.1361									
129.500								.1843							
130.000									.1839	.0790		.0243			
135.000		-.0012			.0043										
139.600								.1797							
144.000											.0406				
155.000	.2245														
180.000	.1612	.0119			.0154										
X/LB	1.0250	1.0500													
PHI															
.000	-.0270	-.0260													

MACH (3) = 4.600 ALPHA (2) = .000 PINF = .27620 Q(PS1) = 4.0904 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9185	.4236	.1845	.1267		.1410	.2171	.6491		.0026					
10.000								.2487							
20.000								.1847							
24.500								.1288							
39.000								.0844							
163.000														.3684	
174.000															
180.000	.9185				.2049		.1564	.1551	.1762	.5339	.6678	.6877		.6748	
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0608	.0191	.0242	.0220	.0072		.0946				-.0217		-.0289	-.0281	
23.000		.0237													
24.000	.0098														
31.500	.0085														
33.100		.0342													
35.000	.0112														
40.000	.0261	.0479													
45.000		.0558													
50.000	.0492														
51.600															
57.000		.0106													
60.900		.0101													

-.0093

TABULATED SOURCE DATA - 1H4

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(RQ3BAC)

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CP5

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 100

UPWT 1059 (IH4) 01-T15-S3N16 ORB. UPPER WING

(RQ3UAC) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 5.000 BETA = .000

MACH (1) = 2.950 ALPHA (1) = .000 PINF = 1.1042 Q(PSI) = 6.7266 RN/L = 5.0200 CPSTG = 1.7529

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0767		
.200	-.0131	.0011	.0578
.600	-.0603	-.0617	
.800		-.0691	
.900		.0591	-.0503
.950		-.0541	

MACH (1) = 2.950 ALPHA (2) = 5.000 PINF = 1.1042 Q(PSI) = 6.7266 RN/L = 5.0200 CPSTG = 1.7529

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0672		
.200	-.0342	-.0194	.0211
.600	-.0754	-.0735	
.800		-.0745	
.900		.0592	-.0640
.950		-.0594	

MACH (2) = 3.700 ALPHA (1) = -5.000 PINF = .54770 Q(PSI) = 5.2445 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1075		
.200	.0156	.0335	.0961
.600	-.0326	-.0326	
.800		-.0356	
.900		.0398	-.0189
.950		-.0252	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 101

UPWT 1059 (IH4) 01-T15-SEN16 ORB. UPPER WING

(RQ3UAC)

MACH (2) = 3.700 ALPHA (2) = .000 PINF = .54733 Q(PS1) = 5.2445 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0714		
.200	-.0056	.0117	.0617
.600	-.0423	-.0390	
.800		-.0426	
.900		.0387	-.0285
.950		-.0326	

MACH (3) = 4.600 ALPHA (1) = -5.000 PINF = .27623 Q(PS1) = 4.0904 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1065		
.200	.0210	.0423	.1091
.600	-.0189	-.0138	
.800		-.0191	
.900		.0405	.0016
.950		-.0103	

MACH (3) = 4.600 ALPHA (2) = .000 PINF = .27623 Q(PS1) = 4.0904 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0835		
.200	-.0004	.0145	.0630
.600	-.0263	-.0241	
.800		-.0242	
.900		.0379	-.0129
.950		-.0165	

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DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 102

UPWT 1059 (1H4) 01-T15-S8N16 ORB. LOWER WING

(RQ3LAC) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 5.000 BETA = .000

MACH (1) = 2.950 ALPHA (1) = .000 PINF = 1.1042 Q(P51) = 6.7266 RN/L = 5.0200 CPSTG = 1.7529

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CH

.000						.3043		.3483		-.0253
.001		-.0025	-.0146		.1548	.0794	.3128	.0569		
.002						.0386		.0446		
.003						.3596		.3658		
.004						.1313		.1017		
.005						.0544		.0440		
.025				.0074	.0499		.0599			
.045				.0074						
.100						.0293		.0486	.0524	
.153	-.0163									
.177					.0267					
.200				.0486						
.299	-.0112									
.302				.0391			.0378			
.428						.0418				
.444	-.0158									
.487					.1203					
.559				.1345						
.600						.1076				
.700						.1251				
.736	.1736									
.800						.1113				
.850						.0703				
.900				-.0191		.0275	.0522		-.0302	

MACH (1) = 2.950 ALPHA (2) = 5.000 PINF = 1.1042 Q(P51) = 6.7266 RN/L = 5.0200 CPSTG = 1.7529

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CH

.000						.3617		.3788		-.0516
.001		-.0227	-.0228		.2700	.1127	.3703	.1169		
.002						.0722		.0979		
.003						.4036		.3355		
.004						.1730		.1722		
.005						.0886		.1005		

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 103

UPWT 1059 (IH4) 01-T15-SBN:6 ORB. LOWER WING

(RQ3LAC)

MACH (1) = 2.950 ALPHA (2) = 5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.025				.0907	.1004		.1254			
.045				.0984						
.100						.0630		.1118	.1129	
.153	-.0235									
.177					.0455					
.200				.0346						
.299	-.0251									
.302				.0442			.0804			
.428						.0623				
.444	.0449									
.487					.1703					
.559				.1853						
.600						.1830				
.700						.2345				
.736	.1970									
.800						.1723				
.850						.1106				
.900				-.0262		.0545	.1302		.0070	

MACH (2) = 3.700 ALPHA (1) = -5.000 PINF = .54730 Q(P51) = 5.2445 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.2396		.3343		-.0020
.001		.0312	.0133		.1893	.0326	.2609	.0339		
.002						.0054		.0175		
.003						.3822		.4189		
.004						.0688		.0626		
.005						.0160		.0205		
.025				.0129	.0105		.0254			
.045				.0141						
.100						.0070		.0187	.0279	
.153	.0287									
.177					-.0091					
.200				.0041						
.299	.0140									
.302				.0318			.0284			
.428						.0387				
.444	.0116									
.487					.1265					
.559				.1198						
.600						.1030				

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 104

UPWT 1059 (IH4) 01-T15-SBN16 ORB. LOWER WING

(RQ3LAC)

MACH (2) = 3.700 ALPHA (1) = -5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CFS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.700						.0941				
.736	.1870									
.800						.0884				
.850						.0633				
.900						.0342	.0371		-.0083	

MACH (2) = 3.700 ALPHA (2) = .000 PINF = .54730 Q(P51) = 5.2445 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CFS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.2332		.3419		-.0110
.001	.0125	-.0023			.1533	.0335	.2807	.0611		
.002						.0038		.0411		
.003						.3368		.3691		
.004						.0729		.1115		
.005						.0156		.0416		
.025				.0104	.0102		.0439			
.045				.0116						
.100						.0054		.0442	.0579	
.153	.0021									
.177					-.0099					
.200					-.0093					
.299	.0026									
.302				.0004			.0303			
.428						.0436				
.444	-.0038									
.487					.0805					
.559				.0791						
.600						.0811				
.700						.0761				
.736	.1096									
.800						.0808				
.850						.0646				
.900					-.0254	.0388	.0388		-.0125	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 106

UPWT 1059 (IH4) 01-T15-SBN16 ORB. LOWER WING

(RQ3LAC)

MACH (3) = 4.600 ALPHA (2) = .000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.302				.0048			.0301			
.428						.0469				
.444	.0022									
.487					.0616					
.559				.0776						
.600						.0594				
.700						.0555				
.736	.1018									
.800						.0590				
.850						.0558				
.900				-.0052		.0437	.0334		-.0039	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 107

UPWT 1059 (IH4) 01-T15-S3N16 ORB. VERT. TAIL

(RQ3VAC) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 5.000 BETA = .000

MACH (1) = 2.950 ALPHA (1) = .000 PINF = 1.1042 Q(P51) = 6.7266 RN/L = 5.0200 CPSTG = 1.7529

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .4152 .3989 .3175 .4112
 .300 .1363 .0850 .0571
 .500 .1076
 .700 -.0066
 .900 -.0311 -.0189 -.0077

MACH (1) = 2.950 ALPHA (2) = 5.000 PINF = 1.1042 Q(P51) = 6.7266 RN/L = 5.0200 CPSTG = 1.7529

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3260 .3261 .2338 .3092
 .300 .0989 .0396 .0225
 .500 .0650
 .700 -.0234
 .900 -.0456 -.0340 -.0275

MACH (2) = 3.700 ALPHA (1) = -5.000 PINF = .54730 Q(P51) = 5.2445 RN/L = 4.8900 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .4886 .4109 .3682 .5014
 .300 .1360 .0636 .0514
 .500 .1140
 .700 .0292
 .900 -.0028 .0188 -.0043

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 108

UPWT 1059 (IH4) 01-T15-SB416 ORB. VERT. TAIL

(RQ3VAC)

MACH (2) = 3.700 ALPHA (2) = .000 PINF = .54731 Q(PSI) = 5.2445 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.4156	.3478	.2954	.3595
.300	.0977	.0504	.0320	
.500		.0707		
.700		.0050		
.900	-.0135	-.0005	-.0106	

MACH (3) = 4.600 ALPHA (1) = -5.000 PINF = .27621 Q(PSI) = 4.0904 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3972	.3835	.3895	.5254
.300	.0762	.0513	.0487	
.500		.0702		
.700		.0280		
.900	.0038	.0199	-.0021	

MACH (3) = 4.600 ALPHA (2) = .000 PINF = .27620 Q(PSI) = 4.0904 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3726	.3537	.2512	.3534
.300	.0583	.0321	.0268	
.500		.0379		
.700		.0019		
.900	-.0049	-.0001	-.0110	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 109

UPWT 1059 (IH4) 01-T15-SB16 EXTERNAL TANK

(RQ3TAC) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 5.000 BETA = .000

MACH (1) = 2.950 ALPHA (1) = .000 PINF = 1.1042 Q(PSI) = 6.7266 RN/L = 5.0200 CP5TG = 1.7529

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT	.0000	.0050	.0100	.0400	.0800	.1500	.2000	.2500	.2750	.3000	.3250	.3350	.3500	.3750	.4000
THETA															
.000				.3686	.2162	.0575									.0375
45.000															.0367
67.500															.0442
90.000															.0470
112.500															.0389
135.000															.0073
157.500															.0522
167.000															.0844
180.000	.9833	.7156	.7009	.3636	.2253	.0579	-.0048	-.0187						.0399	.0670
197.000					.2292	.0714									.0786
210.000						.0679									.0573
220.000															-.0061
225.000															
232.000															.0555
X/LT	.4250	.4500	.4750	.5000	.5250	.5500	.5750	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
THETA															
.000															
45.000															.0084
67.500															.0431
90.000															.0945
112.500															.1095
123.000															.1083
135.000															.1005
157.500	.0852	.0957	.0183	.0518		-.0020									.1254
161.000	.0903														
166.000															
180.000	.1757	.1966	.1077	.0769											.1221
197.000				.0440	.0055	.0296	.0526	.0391	.0127						.1479
210.000				.0812											
220.000															
225.000				.0732											
232.000															
X/LT	.9250	.9350	.9370	.9750											
THETA															
123.000	.1725														

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DATE 20 APR 78

TABULATED SOURCE DATA - IH4

PAGE 110

UPWT 1059 (IH4) 01-T15-S8N16 EXTERNAL TANK

(RQ3TAC)

MACH (1) = 2.950 ALPHA (1) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

151.000

.1428

186.000

.1396 -.0571

219.000

.3384

MACH (1) = 2.950 ALPHA (2) = 5.000 PINF = 1.1042 Q(P51) = 6.7268 RN/L = 5.0200 CPSTG = 1.7529

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000

.4497 .2845 .0981

.0338

45.000

.0323

67.500

.0027

.0375

-.0077

90.000

-.0111 -.0174 -.0108

.2195

.6335

-.0198

-.0441

112.500

-.0208

-.0271

.1473

-.0378

-.0683

135.000

-.0036

.0054

.0104

-.0094

157.500

.0469

167.000

.0469

180.000

.9769 .6175 .6100

.2673

.1604 .0268

-.0239 -.0345

-.0315

.0359

.0378

.0461

197.000

.1711 .0385

-.0297

210.000

.0352

.0391

220.000

-.0253

225.000

.0530

232.000

.0143

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000

.0138

-.0016

45.000

.0056

.0116

.0068

67.500

-.0129

-.0003

.0167

.0215

.0177

.0128

.0774

90.000

-.0499

-.0508

-.0223

.0281

.0251

.0142

.0100

.0395

.1327

112.500

-.0708

-.0530

-.0439

.0106

.0218

.0160

.0094

.0059

.0589

.0966

.1347

123.000

-.0133

.0032

-.0142

-.0166

-.0003

.0095

.0069

.0077

.1185

.0826

.1415

135.000

.0833

.0049

.0397

.0001

-.0001

-.0136

-.0210

.0043

.0438

.0826

.1568

157.500

161.000

166.000

180.000

197.000

210.000

220.000

225.000

232.000

.2124

.1462

.0483

.0322

.0121

-.0126

.0356

.0228

.0085

.0010

-.0156

.0073

.0401

.0916

.1631

.0316

.0024

.0162

.0023

.0023

.0066

.1826

.0383

.0163

.0203

.0066

UPWT 1059 (1H4) 01-T15-SBN16 EXTERNAL TANK

(RQ3TAC)

MACH (1) = 2.950 ALPHA (2) = 5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CI'S

X/LT	.9250	.9350	.9370	.9750
------	-------	-------	-------	-------

THETA				
123.000	.1921			
151.000		.1788		
180.000			.1555	-.0551
210.000			.3519	

MACH (2) = 3.700 ALPHA (1) = -5.000 PINF = .54730 Q(PSI) = 5.2445 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CF'S

X/LT	.0000	.0050	.0100	.0400	.0800	.1500	.2000	.2500	.2750	.3000	.3250	.3350	.3500	.3750	.4000
------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

[illegible]

X/LT	.4250	.4500	.4750	.5000	.5250	.5500	.5750	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
THETA															
.000								-.0041				-.0190			
45.000								-.0291				-.0181			.0100
67.500				-.0472				-.0335	-.0323	-.0233	-.0179	-.0131			.0079
90.000		-.0258		-.0289		-.0236		.0073		.0038	.0009	-.0052	-.0094		.0442
112.500		-.0041		-.0023		.0166		.0229	.0565	.0434	.0402	.0282	.0272		.0975
123.000													.0043	.0510	.1124
135.000		.0540		.0868		.0314		.0257	.0140	.0329	.0319	.0270	.0907		.0981
157.500	.1066	.1504	.0451	.0659		.0327		.0482	.0281	.0228	.0165	.0340	.0631		.1220
161.000	.0973														
166.000				.0179						.0299					
180.000	.2194	.2385	.0555	.0669	.0325	.0619	.0478	.0320	.0516	.0272	.0235	.0092	.0880		.1420
197.000				.0377						.0334					.1328
210.000								.0471				.0244			
220.000				.2924						.0411					
232.000								.0260				.0263			

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 112

UPWT 1059 (IH4) 01-T15-58N16 EXTERNAL TANK

(RQ3TAC)

MACH (2) = 3.700 ALPHA (1) = -5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CP3

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .1458

151.000 .1887

180.000 .1651 -.0331

210.000 .2846

MACH (2) = 3.700 ALPHA (2) = .000 PINF = .54730 Q(PSI) = 5.2445 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CP3

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000

45.000

57.500

90.000

112.500

135.000

157.500

167.000

180.000

197.000

210.000

220.000

225.000

232.000

.3423 .2001 .0519

-.0005 -.0105 -.0023 -.0016

.1321 .5360 .0141

-.0122 .0018 .0394 .0130

.0011 .0308 .0002 .0238

.0642 .0029 .0682

.0644 .0565 .0509

.0188 .0849

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000

45.000

57.500

90.000

112.500

123.000

135.000

157.500

166.000

180.000

197.000

210.000

220.000

232.000

.0053

.0142

.0149

.0024

.0052

.0168

.0260

.0220

.0173

.0138

.0160

.0129

.0212

.0275

.0681

.0717

.0721

.0916

.1079

.0263

.0197

.0025

.0127

.0045

.0035

.0041

.0059

.0743

.0340

.0621

.0937

.0621

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 113

UPWT 1059 (IH4) 01-T15-SBN16 EXTERNAL TANK

(RQ3TAC)

MACH (2) = 3.700 ALPHA (2) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .0917

151.000 .1000

180.000 .1297 -.0325

210.000 .2568

MACH (3) = 4.600 ALPHA (1) = -5.000 PINF = .27620 Q(PSI) = 4.0904 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000 .2550 .1354 .0255 .0046

45.000 .0041

67.500 .0201

90.000 .0004

112.500 .0235

135.000 .0029

157.500 .0674

167.000 .0906

180.000 .9879 .7362 .7586 .4244 .2671 .0906 .0296 .0141 .0117 .0120 .0344 .0846

197.000 .2640 .1035

210.000 .0983

220.000 .0726

225.000 .0465

232.000 .1176

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000 -.0032 -.0085

45.000 -.0200 -.0151 .0039

67.500 -.0190 -.0210 -.0185 -.0144 -.0126 .0099

90.000 -.0112 -.0158 -.0148 .0018 .0172 .0140 .0074 .0047 .0140

112.500 .0039 .0053 .0180 .0240 .0370 .0492 .0390 .0375 .0310 .0441

123.000 .0872 .0434 .0245 .0231 .0232 .0322 .0282 .0122 .0326 .0995

135.000 .0573 .0637 .0363 .0567 .0215 .0291 .0158 .0211 .0532 .1078

157.500 .0925 .1286 .0493 .0637 .0363 .0567 .0215 .0291 .0158 .0211 .0532 .1078

161.000 .0862

166.000 .0318

180.000 .1926 .2756 .0606 .0407 .0444 .0483 .0462 .0302 .0238 .0359 .0268 .0194 .0762 .1273

197.000 .0499

210.000 .0422 .0362 .0256 .1171

220.000 .3763 .0411 .0254

232.000 .0260

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 114

UPWT 1059 (IH4) 01-715-98N16 EXTERNAL TANK

(RQ37AC)

MACH (3) = 4.600 ALPHA (1) = -5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .1321

151.000

.1633

180.000

.1483

-.0193

210.000

.2478

MACH (3) = 4.600 ALPHA (2) = .000 PINF = .27620 Q(PST) = 4.0904 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000

.3390

.1994

.0547

.0187

45.000

-.0049

67.500

-.0060

90.000

.0042

-.0009

.0053

.0074

.3068

.0234

.0257

.0030

112.500

.0047

.0083

.0061

.0275

.0039

135.000

.0085

.0138

-.0031

-.0017

157.500

.0406

167.000

.0396

180.000

.9858

.6579

.6630

.3352

.2048

.0558

.0092

.0073

.0063

.0204

.0309

.0427

197.000

.2025

.0650

.0676

210.000

.0631

.0422

220.000

.0189

225.000

.0293

232.000

.1115

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000

-.0009

-.0030

45.000

-.0091

-.0027

.0045

67.500

-.0178

-.0088

-.0021

-.0012

-.0051

-.0043

.0318

90.000

-.0150

-.0209

-.0154

.0013

.0009

.0012

-.0009

-.0042

.0309

112.500

-.0144

-.0150

-.0144

.0027

.0064

.0196

.0192

.0180

.0166

.0479

123.000

.0690

.0277

.0064

.0084

.0046

.0046

.0072

.0394

.0700

135.000

.0208

.0322

.0529

.0165

.0248

.0104

.0071

.0004

.0002

.0201

.0726

157.500

.0369

.0566

161.000

.0487

166.000

.0692

180.000

.1248

.1630

.0605

.0453

.0207

.0218

.0267

.0172

.0089

.0188

.0204

.0093

.0013

.0370

.1000

197.000

.0791

.0258

.0188

.0059

.0967

210.000

.3493

.0182

.0173

.0067

220.000

-.0012

232.000

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 115

UPWT 1059 (IH4) 01-T 5-S8N16 EXTERNAL TANK

(RQ3TAC)

MACH (3) = 4.600 ALPHA (2) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .1010

151.000

.1135

180.000

.1428

-.0226

210.000

.2013

ORIGINAL PAGE IS
OF POOR QUALITY

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 115

UPWT 1059 (1H4) 01-T15-S8N16 SOLID RCKT. BSTR.

(RQ3SAC) (15 APR 76)

REFERENCE DATA

CREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 5.000 BETA = .000

MACH (1) = 2.950 ALPHA (1) = .000 PINF = 1.1042 Q(P51) = 6.7266 RN/L = 5.0200 CPSTG = 1.7529

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.0874		.1088	.1115		.1125							-.0050		
180.000				.1241		.1013							.0377		
225.000													.0404		.0198
247.500										.0188			.0296	.0150	.0155
260.000								.6012							
270.000		.2510	.1527	.0916	.0941	.3561	.7899		-.0397	-.0110	-.0530	-.0455	.0052	-.0310	-.0271
315.000												-.0467			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	.0022	.0943	-.0215					.0553				.0973			
180.000	.0049	.1455	.1497	.0165				.0715			.0515	.0086			
210.000						-.0052	.1688								
215.000															
225.000		.2182	.1068	-.0595											
240.000															
247.500	-.0046							-.0244	-.0657		-.0796				
270.000	-.0303	.3309	-.0466	-.0657				-.0447			-.0446	-.0464			
315.000	-.0251							-.0490				.0549			

MACH (1) = 2.950 ALPHA (2) = 5.000 PINF = 1.1042 Q(P51) = 6.7266 RN/L = 5.0200 CPSTG = 1.7529

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.0641		.0992	.1034		.1056							-.0226		
180.000				.0696		.0502							-.0036		
225.000													.0044		.0082
247.500													.0323	.0255	.0124
260.000								.5878							
270.000		.2507	.1527	.0897	.0940	.1872	.9212		-.0400	-.0451	-.0465	-.0484	.0117	.0240	.0133
315.000												-.0099			

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(RQ3SAC)

DEPENDENT VARIABLE CP/CPS

DEPENDENT VARIABLE CP/CPS

PSI											
90.000	-.0241	.0058	-.0321								
180.000	.0134	.1489	.1799	.0188							
210.000					.0233	.2189					
215.000							.0304				
225.000		.2071	.0471	-.0277				-.0291			
240.000							.0329				
247.500	.0148						-.0178				
270.000	-.0104	.2865	-.0273	-.0400							
315.000	-.0163						-.0300				

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 11B

UPWT 1059 (164) 01-T15-S8N16 SOLID RCKT. BSTR.

(RQ3SAC)

MACH (2) = 3.700 ALPHA (2) = .000 PINF = .54730 Q(P51) = 5.2445 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.1994		.1059	.1069		.1074							-.0057		
180.000				.1326		.1042					-.0105		-.0162		
225.000										.0382			.0009		.0262
247.500												-.0313	.0080	.0180	.0185
260.000								.7199							
270.000		.2916	.1649	.1064	.0947	.1424	.6063		-.0138	.0039	-.0190	-.0323	-.0032	-.0095	-.0153
315.000												-.0293			

[illegible]

MACH (3) = 4.600 ALPHA (1) = -5.000 PINF = .27620 Q(PSI) = 4.0904 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.3482		.1053	.1032		.1038							-.0088		
180.000				.2095		.1694					.0086		.0060		
225.000										.0225			.0556		.0392
247.500												-.0009	.0293	.0525	.0403
260.000								.3412							
270.000						.1725	.3044		-.0022	.0021	-.0040	-.0146	-.0044	.0137	.0070
315.000		.3271	.2044	.1161	.0943							-.0268			

X\LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
PSI												
90.000	-.0114	.0258	-.0171					.0021				-.0020
180.000	.0211	.1306	.1783	.0267				.0801			.0580	.0221
210.000					.0244	.1901		.0498		.0097		
215.000							.0430		-.0095		-.0233	
225.000		.1299	.0814	-.0117				.0411			-.0046	
240.000								-.0121			-.0138	-.0167

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 119

UPWT 1059 (IH4) 01-T15-SBN16 SOLID RCKT. BSTR.

(RQ3SAC)

MACH (3) = 4.600 ALPHA (1) = -5.000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

PSI

247.500 .0257

270.000 .0016 .2833 -.0107 -.0247

-.0191

.0387

315.000 -.0092

MACH (3) = 4.600 ALPHA (2) = .000 PINF = .27620 Q(PSI) = 4.0904 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

PSI

90.000 1.3759

.1088

.1083

.1089

180.000

.1426

.1100

225.000

.0093

-.0035

-.0017

-.0103

-.0049

.0252

247.500

-.0184

.0117

.0121

.0202

260.000

270.000

.3377

.2097

.1189

.1214

.1258

.3530

.3794

.0007

.0240

-.0033

-.0209

-.0037

-.0055

-.0059

315.000

-.0182

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

PSI

90.000 -.0019

.0738

-.0061

.0275

.0314

180.000

.0093

.1172

.1306

.0225

.0569

.0241

.0275

.0388

.0285

210.000

.0164

.1250

.0116

.0133

-.0183

.0030

-.0268

215.000

.1408

.0496

-.0148

.0133

-.0141

-.0177

-.0192

-.0177

225.000

240.000

247.500

.0099

.1683

-.0161

-.0224

-.0176

.0380

270.000

-.0059

315.000

-.0029

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 120

UPWT 1059 (IH4) 01-T15-GBN16 ORBITER FUSELAGE

(RQ38AD) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 BETA = -5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32910 Q(PSI) = 3.1537 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	1.2217	.5279	.1873	.1973		.1915	.1474	.9360		.0167					
10.000								.3996							
20.000								.1337							
24.500								.1795							
39.000								.1812							
163.000														.6956	
174.000															
180.000	1.2217				.4057			.3391	.3341	.3791	.9335	1.1009	1.0181		.9390
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.1112	.0611	.0398	.0260	.0387		.2179				-.0325		-.0456	-.0454	
23.000		.0634													
24.000	.1340														
31.500	.1138														
33.100		.0784													
35.000	.0919														
40.000	.0965	.0850													
45.000		.0911													
50.000	.1265														
51.600															
57.000		.1144													
60.900		.0904													
65.000		.0788													
68.000															
69.000		.0779													
79.300					.0593										
95.500					.0639		.0483								
95.700		.0531													
96.300	.1362														
103.000					.0651										
105.000															
112.600					.0678										
117.500															
120.800									.2279			.0713		.0738	
127.900						.4121									
129.500								.3714							

-.0336

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 121

UPWT 1059 (IH4) 01-T 5-SBN16 ORBITER FUSELAGE

(RQ3BAD)

MACH (1) = 3.700 ALPHA (1) = -5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7000	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
130.000									.2780	.1045		.0592			
135.000		.0113			.0689										
139.600									.2327						
144.000												.0648			
155.000	.3294														
180.000	.1664	.0195			.0390										
X/LB	1.0250	1.0500													
PHI															
.000	-.0457	-.0415													

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32910 Q(PSI) = 3.1537 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0090	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.8474	.3942	.1736	.1685		.1666	.1361	.7679		-.0022					
10.000								.3141							
20.000								.1115							
24.500								.1358							
39.000								.1245							
163.000														.4316	
174.000												.6783			
180.000	.8474				.2003			.1543	.1542	.1782	.5303	.6263		.5907	
X/LB	.2000	.3000	.4000	.5000	.6000	.7000	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0506	.0197	.0083	-.0067	.0007		.1222				-.0405		-.0479	-.0470	
23.000		.0238													
24.000	.0939														
31.500	.0792														
33.100		.0336													
35.000	.0953														
40.000	.1218	.0399													
45.000		.0503													
50.000	.1293														
51.600															
57.000		.0538											.0069		
60.900		.0538													
65.000		.0535													
68.000														-.0018	

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 122

UPWT 1059 (1H4) 01-T15-SBN16 ORBITER FUSELAGE

(RQ39AD)

MACH (1) = 3.700 ALPHA (2) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE: CP/CPS

[illegible]

X/LB	1.0250	1.0500
------	--------	--------

PHI
.000 -.0478 -.0450

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .16570 Q(PS1) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

TABULATED SOURCE DATA - IH4

UPWT 1059 (1H4) 01-T15-SBN16 ORBITER FUSELAGE

(RQ3BAD)

MACH (2) = 4.600 ALPHA (1) = -5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20-APR 76

TABULATED SOURCE DATA - IH4

PAGE 124

UPWT 1059 (1H4) 01-T15-SBN16 ORBITER FUSELAGE

(RQ38AD)

MACH (2) = 4.600 ALPHA (2) = .000 PINF = .16570 Q(PSI) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 125

UPWT 1059 (IH4) 01-T15-S8N16 ORBITER FUSELAGE

(RQ3BAD)

MACH (2) = 4.600 ALPHA (2) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0500

PHI
.000 -.0264 -.0261

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 126

UPWT 1059 (IH4) 01-T15-SBN16 ORB. UPPER WING

(RQSUAD) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 BETA = -5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32910 Q(PSI) = 3.1537 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1003		
.200	.0185	.0248	.0910
.600	-.0148	-.0313	
.800		-.0311	
.900		.0343	-.0125
.950		-.0139	

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32910 Q(PSI) = 3.1537 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0246		
.200	-.0196	-.0117	.0272
.600	-.0429	-.0435	
.800		-.0434	
.900		.0320	-.0286
.950		-.0294	

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .16570 Q(PSI) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0529		
.200	.0007	.0150	.0594
.600	-.0249	-.0236	
.800		-.0233	
.900		.0313	-.0001
.950		-.0121	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 127

UPWT 1059 (IH4) 01-T15-S9N16 ORB. UPPER WING

(RQ3UAD)

MACH 1.2 = 4.600 ALPHA (2) = .000 PINF = .16570 Q(PSI) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE C_p/C_{ps}

2Y/BW .4000 .6000 .8000

X/CW

.050	.0236		
.200	-.0132	-.0043	.0333
.600	-.0279	-.0257	
.800		-.0237	
.900		.0338	-.0105
.950		-.0139	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 128

UPWT 1059 (IH4) 01-T15-S8N16 ORB. LOWER WING

(RQ3LAD) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 3.000 BETA = -5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32910 Q(P51) = 3.1537 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.3635		.5182		.0265
.001		.0625	.0173		.2810	.0674	.4130	.0710		
.002						.0279		.0572		
.003						.5813		.6586		
.004						.1284		.1046		
.005						.0470		.0567		
.025				.0115	.0317		.0637			
.045				.0158						
.100						.0510		.0562	.0605	
.153	.0386									
.177					.0210					
.200				.0176						
.299	.0340									
.302				.0632			.0557			
.428						.0538				
.444	.0322									
.487					.1857					
.559				.2653						
.600						.1886				
.700						.1205				
.736	.4131									
.800						.1014				
.850						.0858				
.900				.0132		.0616	.0484		.0181	

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32910 Q(P51) = 3.1537 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.3657		.4955		.0062
.001		.0267	.0096		.2549	.0832	.4300	.1161		
.002						.0399		.0902		
.003						.4882		.5256		
.004						.1418		.1779		
.005						.0572		.0928		

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 129

UPWT 1059 (IH4) 01-T15-SBN16 ORB. LOWER WING

(RQ3LAD)

MACH (1) = 3.700 ALPHA (2) = .000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.025				.0206	.0437		.0988			
.045				.0197						
.100						.0418		.0922	.1023	
.153	.0050				.0098					
.177										
.200				-.0027						
.299	-.0022									
.302				.0146			.0714			
.428						.0478				
.444	-.0022									
.487					.1622					
.559				.1715						
.600						.1312				
.700						.1036				
.736	.3199									
.800						.0797				
.850						.0631				
.900				-.0048		.0442	.0446	.0043		

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .16570 Q(PS1) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.4115		.5697		.0302
.001		.0600	.0361		.3051	.0934	.4628	.1117		
.002						.0478		.0804		
.003						.6005		.8573		
.004						.1586		.1632		
.005						.0647		.0865		
.025				.0350	.0633		.0945			
.045				.0331						
.100						.0440		.0820	.1030	
.153	.0390									
.177					.0294					
.200				.0297						
.299	.0233									
.302				.0314			.0559			
.428						.0777				
.444	.0196									
.487					.1110					
.559				.0848						
.600						.1160				

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DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 130

UPWT 1059 (IH4) 01-T15-S8N16 ORB. LOWER WING

(RQ3LAD)

MACH (2) = 4.600 ALPHA (1) = -5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.700						.0760				
.736	.3302									
.800						.0523				
.850						.0417				
.900				.0210		.0332	.0405		.0011	

MACH (2) = 4.600

ALPHA (2) =

.000

PINF =

.16570

Q(PSI) = 2.4540

RN/L =

3.0000

CPSTG =

1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.3944		.5475		.0055
.001		.0382	.0239		.2498	.0974	.4750	.1350		
.002						.0525		.1003		
.003						.5147		.5676		
.004						.1632		.1840		
.005						.0698		.1037		
.025				.0301	.0606		.1146			
.045				.0283						
.100						.0499		.0948	.1073	
.153	.0235									
.177					.0313					
.200				.0266						
.299	.0053			.0296						
.302						.0563	.0753			
.428										
.444	.0133									
.487					.1020					
.559				.0797						
.600						.0830				
.700						.0693				
.736	.1417									
.800						.0589				
.850						.0511				
.900				.0474		.0426	.0220		.0130	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 131

UPWT 1059 (IH4) 01-T15-S8N16 ORB. VERT. TAIL

(RQ3VAD) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 3.000 BETA = -5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32910 Q(PSI) = 3.1537 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.4266	.6432	.5640	.6660
.300	.2658	.2653	.1626	
.500		.2379		
.700		.0670		
.900	.0429	.0485	.0676	

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32910 Q(PSI) = 3.1537 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3772	.3887	.3960	.3648
.300	.1603	.1282	.1118	
.500		.1393		
.700		.0309		
.900	.0022	.0176	.0250	

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .16570 Q(PSI) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.4015	.4011	.4474	.5319
.300	.1671	.1211	.0921	
.500		.1520		
.700		.0633		
.900	.0215	.0496	.0341	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 132

UPWT 1059 (IH4) 01-T15-38N16 ORB. VERT. TAIL

(RQ3VAD)

MACH (1) = 4.600 ALPHA (2) = .000 PINF = .16370 Q(PSI) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3836 .4195 .3022 .3562

.300 .1239 .1006 .0787

.500 .1027

.700 .0346

.900 .0142 .0249 .0150

UPWT 1059 (144) 01-T15-58N16 EXTERNAL TANK

(RQ3TAD) (15 APR 76)

REFERENCE DATA

SREF	=	2690.0000	SQ.FT.	XMRP	=	.0000	INCHES
LREF	=	1290.3000	INCHES	YMRP	=	.0000	INCHES
BREF	=	1290.3000	INCHES	ZMRP	=	.0000	INCHES
SCALE	=	.0100					

PARAMETRIC DATA

RN/L = 3.000 BETA = -5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32910 Q(PSI) = 3.1537 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 134

UPWT 1059 (IH4) 01-T15-S3N16 EXTERNAL TANK

(RQ3TAD)

MACH (1) = 3.700 ALPHA (1) = -5.000

SECTION ()EXTERNAL TANK	DEPENDENT VARIABLE C ² /CPS
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
47	47
48	48
49	49
50	50
51	51
52	52
53	53
54	54
55	55
56	56
57	57
58	58
59	59
60	60
61	61
62	62
63	63
64	64
65	65
66	66
67	67
68	68
69	69
70	70
71	71
72	72
73	73
74	74
75	75
76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

X/LT	.9250	.9350	.9370	.9750
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THETA			
151.000	.2774		
180.000		.2598	-.0252
210.000		.3102	

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32910 Q(PSI) = 3.1537 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1)EXTERNAL TANK	DEPENDENT VARIABLE CP/CPS
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
47	47
48	48
49	49
50	50
51	51
52	52
53	53
54	54
55	55
56	56
57	57
58	58
59	59
60	60
61	61
62	62
63	63
64	64
65	65
66	66
67	67
68	68
69	69
70	70
71	71
72	72
73	73
74	74
75	75
76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

X/LT	.0000	.0050	.0100	.0400	.0800	.1500	.2000	.2500	.2750	.3000	.3250	.3350	.3500	.3750	.4000
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[illegible]

X/LT	.4250	.4500	.4750	.5000	.5250	.5500	.5750	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
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[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 135

UPWT 1059 (IH4) 01-TIE-SBN16 EXTERNAL TANK

(RQ3TAD)

MACH (1) = 3.700 ALPHA (2) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA
123.000 .1566
151.000 .2470
180.000 .1603 -.0342
210.000 .1878

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .15570 Q(P51) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA
.000 .2548 .1367 .0232 -.0072
45.000 -.0056
67.500 .0024 -.0153
90.000 .0236 .0078 .0221 .1879 .4975 .0419 .0078
112.500 .0231 .0327 .0259 .0306
135.000 .0334 .0330 .0174 .0211
157.500 .0588
167.000 .0505
180.000 .9665 .7193 .8130 .4234 .2639 .0915 .7307 .0142 .0181 .0282 .0352 .0640
197.000 .2477 .0901
210.000 .0721 .0199
220.000 .0413
225.000 .0417
232.000 .0553 .0920

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA
.000 -.0152 -.0083
45.000 -.0224 -.0245 -.0136
67.500 -.0225 -.0143 .0143
90.000 -.0071 -.0143 -.0129 .0071 .0244 .0232 .0217 .0166 .0186
112.500 .0089 .0085 .0194 .0238 .0426 .0708 .0648 .0559 .0535 .0386
123.000 .0419 .0439 .0745 .0500 .0443 .0370 .0342 .0370 .0669 .0620
135.000 .1051 .0881 .1266 .0688 .0560 .0388 .0267 .0189 .0220 .0445 .0726 .1235
157.500 .0723 .1174
161.000 .0688
166.000 .2082 .2707 .0666 .0465 .0325 .0470 .0522 .0306 .0235 .0256 .0174 .0089 .0169 .0578 .0989
180.000 .0518 .0195
197.000 .0096 .0194 .0056
210.000 .0113 .0064
220.000
232.000

UPWT 1059 (IH4) 01-T15-SBN16 EXTERNAL TANK

(RQ3TAD)

MACH (2) = 4.600 ALPHA (1) = -5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA
123.000 .1401
151.000 .2137
180.000 .1518 -.0187
210.000 .1872

MACH (2) = 4.600 ALPHA (2) = .000 PINF = .16570 Q(PST) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA
.000 .3378 .1997 .0556 .0089
45.000 .0235
67.500 .0013
90.000 .0113
112.500 .0222 .1833 .4527 .0338
135.000 .0147 .0188 .0341 .0419 .0021
157.500 .0137 .0154 .0041 .0300
167.000 .0598
180.000 .9756 .6686 .6814 .3307 .2001 .0553 .0096 .0097 .0118 .0158 .0358
197.000 .1895 .0544 .0101
210.000 .0443 .0306
220.000 .0402
225.000 .0337
232.000 .0978

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA
.000 -.0076 -.0072
45.000 -.0098 -.0041 .0111
67.500 -.0036 -.0008 .0013 .0006 -.0038 .0194
90.000 -.0105 -.0167 -.0006 .0053 .0078 .0114 .0108 .0283
112.500 -.0109 -.0112 -.0126 -.0102 .0038 .0055 .0138 .0248 .0319 .0378 .0407
123.000 .0126 .0096 .0062 .0312 .0220 .0192 .0164 .0127 .0290 .0302 .0591
135.000 .0254 .0502 .0707 .1122 .0572 .0300 .0235 .0111 .0020 .0055 .0416 .0581
157.500 .0411 .0559 .0328 .0132 .0158 .0289 .0231 .0079 -.0022 -.0041 .0020 .0302 .0657
161.000 .0459 .0459 .0006 -.0007 .0006
166.000 .1248 .2442 .0446 .0328 .0132 .0158 .0289 .0231 .0079 -.0022 -.0041 .0020 .0302 .0657
180.000 .0459 .0328 .0132 .0158 .0289 .0231 .0079 -.0022 -.0041 .0020 .0302 .0657
197.000 .0459 .0328 .0132 .0158 .0289 .0231 .0079 -.0022 -.0041 .0020 .0302 .0657
210.000 .3973 -.0006 -.0007 .0006
220.000 .0129 .0014
232.000

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 137

UPWT 1059 (IH4) 01-T15-38N16 EXTERNAL TANK

(RQ3TAD)

MACH (2) = 4.600 ALPHA (2) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .1182

151.000 .1108

180.000 .1303 -.0247

210.000 .1348

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 139

UPWT 1059 (IH4) 01-T15-18N16 SOLID RCKT. BSTR.

(RQ3SAD) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 BETA = -5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32910 Q(P51) = 3.1537 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.3401		.1573	.1521		.1577					.0786		-.0145		
180.000				.3278		.2836							.1081		
225.000										.1897			.1350		.0781
247.500											.0301		.1141	.0901	.0723
260.000								.9290							
270.000		.3217	.2030	.1327	.0947	.2285	1.0531		.0036	-.0154	-.0109	-.0058	.0377	.0291	.0129
315.000											-.0392				
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	-.0321	.0182	-.0374					.0030				.0022			
180.000	.0442	.2573	.2616	.0880				.1410			.1211	.0692			
210.000					.0794	.3511		.1368							
215.000							.0792			.0544					
225.000		.4915	.0067	.0169					-.0053		-.0313				
240.000								.0554			.0190				
247.500	.0416							.0090			-.0080	-.0201			
270.000	.0009	.3201	-.0275	-.0408				-.0375					.0331		
315.000	-.0348														

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32910 Q(P51) = 3.1537 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.3905		.1649	.1680		.1721							.0098		
180.000				.1739		.1374					.0093		-.0069		
225.000										.0438			.0156		.0384
247.500											-.0229		.0219	.0358	.0402
260.000								.7212							
270.000		.3323	.2167	.1371	.1240	.1754	.9903		.0062	.0155	-.0143	-.0305	.0049	-.0051	-.0014
315.000											-.0276				

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 139

UPWT 1059 (IH4) 01-T15-S3N16 SOLID RCKT. BSTR.

(RQ3SAD)

MACH (1) = 3.700 ALPHA (2) = .000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
PSI												
90.000	.0133	.1260	-.0063					.0492				.0809
180.000	.0237	.1603	.1366	.0605				.1257			.0946	.0610
210.000					.0422	.2469		.0660		.0432		
215.000							.0437		-.0118		-.0336	
225.000		.1618	.1457	.0007				.0444			.0122	
240.000								-.0026			-.0154	-.0219
247.500	.0211											
270.000	-.0069	.1518	-.0302	-.0351				-.0268				.0333
315.000	-.0122											

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .16570 Q(PSI) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.5929		.1635	.1638		.1677							.0029		
180.000				.2588		.2078					.0259		.0143		
225.000										.0581			.0294		.0593
247.500												.0012	.0331	.0606	.0596
260.000								.8331							
270.000		.3803	.2371	.1462	.0929	.1878	.7721		.0242	.0163	.0024	-.0136	-.0022	.0153	.0133
315.000												-.0233			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	-.0044	.0760	-.0110					.0232				.0432			
180.000	.0371	.1720	.1104	.0786				.1433			.0763	.0375			
210.000					.0708	.2867		.0533		.0308					
215.000							.0591		-.0033		-.0144				
225.000		.1843	.0653	.0078				.0656			.0038				
240.000								-.0052			-.0058	-.0078			
247.500	.0415														
270.000	.0102	.2137	-.0114	-.0240				-.0235				.0324			
315.000	-.0055														

ORIGINAL PAGE IS
OF POOR QUALITY

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 140

UPWT 1059 (IH4) 01-T15-S6N16 SOLID RCKT. BSTR.

(RQ35AD)

MACH (2) = 4.600 ALPHA (2) = .000 PINF = .16570 Q(PSI) = 2.4540 RN/L = 3.0000 CP5TG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CF/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 141

UPWT 1059 (IH4) 01-T15-S8116 ORBITER FUSELAGE

(RQ3BAE) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 BETA = 5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32925 Q(PSI) = 3.1551 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	1.2615	.5356	.1947	.1878		.1823	.1135	.7880		.0317					
10.000								.5421							
20.000								.1117							
24.500								.0593							
39.000								.0921							
163.000														.4945	
174.000															
180.000	1.2615				.4098			.3429	.3380	.3637	.8677	.9352	.9860		.9206
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.1418	.0429	.0675	.0285	.0337		.2411				-.0225		-.0368	-.0396	
23.000		.0279													
24.000	.0904														
31.500	.0743														
33.100		.0288													
35.000	.0708														
40.000	.0590	.0314													
45.000		.0334													
50.000	.0510														
51.600															
57.000		.0296													
60.900		.0295													
65.000		.0291													
68.000															
69.000		.0200													
79.300					.0176										
95.500					.0294		.0159								
95.700		-.0114													
96.300	.0300														
103.000					.0163										
105.000															-.0298
112.600					.0159										
117.500															
120.800									.0552			.0099		.0099	
127.900						.2108									
129.500								.2092							

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 142

UPWT 1059 (IH4) 01-T15-S8N16 ORBITER FUSELAGE

(R03BAE)

MACH (1) = 3.700 ALPHA (1) = -5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
130.000									.1381	.0251		-.0013			
135.000		-.0036			.0153										
139.600									.2242						
144.000												.0302			
155.000	.2081														
180.000	.1649	.0153			.0400										
X/LB	1.0250	1.0500													
PHI															
.000	-.0440	-.0390													

PHI

130.000

135.000

139.600

144.000

155.000

180.000

X/LB

PHI

.000

MACH (1) = 3.700

ALPHA (2) =

.000

PINF =

.32925

Q(PSI) = 3.1551

RN/L = 3.0000

CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.8945	.4005	.1364	.0840		.1470	.3174	.8044		-.0078					
10.000								.4710							
20.000								.2554							
24.500								.1559							
39.000								.0476							
163.000														.2748	
174.000															
180.000	.8945				.2041			.1572	.1556	.1738	.5042	.5514	.6087		.5821
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0265	.0188	.0182	.0028	.0054		.1593				-.0300		-.0423	-.0438	
23.000		-.0049													
24.000	-.0141														
31.500	-.0109														
33.100		-.0072													
35.000	-.0115														
40.000	-.0115	-.0031													
45.000		.0018													
50.000	.0116														
51.600															
57.000		-.0136													
60.900		-.0138													
65.000		-.0139													
68.000															

X/LB

PHI

.000

10.000

20.000

24.500

39.000

163.000

174.000

180.000

X/LB

PHI

.000

23.000

24.000

31.500

33.100

35.000

40.000

45.000

50.000

51.600

57.000

60.900

65.000

68.000

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 143

UPWT 1059 (1H4) 01-T15-38N16 ORBITER FUSELAGE

(RQ3BAE)

MACH (1) = 3.700 ALPHA (2) = .000

SECTION () ORBITER FUSELAGE	DEPENDENT VARIABLE SP/CPS

[illegible]

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .16570 Q(PSI) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION () ORBITER FUSELAGE	DEPENDENT VARIABLE CP/CPS
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
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37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
47	47
48	48
49	49
50	50
51	51
52	52
53	53
54	54
55	55
56	56
57	57
58	58
59	59
60	60
61	61
62	62
63	63
64	64
65	65
66	66
67	67
68	68
69	69
70	70
71	71
72	72
73	73
74	74
75	75
76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 144

UPWT 1059 (1H4) 01-T15-98N16 ORBITER FUSELAGE

(RQ3BAE)

MACH (2) = 4.600 ALPHA (1) = -5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 146

UPWT 1059 (IH4) 01-T15-SEN16 ORBITER FUSELAGE

(RQ3BAE)

MACH (2) = 4.600 ALPHA (2) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0500

PHI
.000 -.0266 -.0259

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 147

UPWT 1059 (IH4) 01-T15-S8N16 ORB, UPPER WING

(RQ3UAE) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 BETA = 5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32925 Q(PST) = 3.1551 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB, UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.2287		
.200	.0618	.0966	.1953
.600	-.0154	-.0116	
.800		-.0195	
.900		.0596	.0079
.950		-.0030	

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32925 Q(PST) = 3.1551 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB, UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1273		
.200	.0136	.0376	.0963
.600	-.0335	-.0301	
.800		-.0303	
.900		.0647	-.0113
.950		-.0179	

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .16570 Q(PST) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB, UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1680		
.200	.0453	.0737	.1559
.600	-.0110	-.0038	
.800		-.0102	
.900		.0530	.0173
.950		.0031	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 148

UPWT 1059 (IH4) 01-T15-SBN16 ORB. UPPER WING

(RQ3UAE)

MACH (2) = 4.600 ALPHA (2) = .000 PINF = .16570 Q(PSI) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CP5

2Y/BW .4000 .6000 .8000

X/CW

.050	.1158		
.200	.0096	.0389	.1084
.600	-.0189	-.0164	
.800		-.0161	
.900		.0544	-.0007
.950		.0034	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 149

UPWT 1059 (IH4) 01-T15-SBN16 ORB. LOWER WING

(RQ3LAE) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 3.000 BETA = 5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32925 Q(PSI) = 3.1551 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.3142		.2893		-.0127
.001		.0319	.0288		.1820	.0593	.2324	.0301		
.002						.0164		.0170		
.003						.4370		.3785		
.004						.1155		.0544		
.005						.0328		.0175		
.025				.0700	.0322		.0299			
.045				.0717						
.100						.0121		.0150	.0095	
.153	.0358									
.177					.0345					
.200				.0395						
.259	.0209									
.302				.0750			.0222			
.428						.1295				
.444	.0351									
.487					.1399					
.559				.1858						
.600						.0949				
.700						.0529				
.736	.2200									
.800						.0483				
.850						.0356				
.900				.0109		.0207	.0166		-.0071	

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32925 Q(PSI) = 3.1551 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.1603		.2079		-.0219
.001		.0038	-.0112		.0911	.0196	.1749	.0303		
.002						.0067		.0235		
.003						.2295		.2489		
.004						.0502		.0502		
.005						.0127		.0232		

DATE 20 APR 75

TABULATED SOURCE DATA - IH4

PAGE 150

UPWT 1059 (IH4) 01-T15-SBN16 ORB. LOWER WING

(RQ3LAE)

MACH (1) = 3.700 ALPHA (2) = .000

SECTION (1) ORB. LOWER WING		DEPENDENT VARIABLE (P/CPS)									
2Y/BW		.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW											
.025					-.0023	.0023		.0114			
.045					-.0029						
.100							.0103		.0231	.0205	
.153	.0121										
.177						.0143					
.200					.0114						
.299	-.0106										
.302					.0371			.0161			
.428							.0601				
.444	-.0184										
.487						.0827					
.559					.1010						
.600							.0599				
.700							.0384				
.736	.1117										
.800							.0214				
.850							.0066				
.900					-.0224		-.0048	.0157		-.0183	

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .16570 Q(P51) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING		DEPENDENT VARIABLE CP/CPS									
2Y/BW		.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW											
.000							.2020		.1958		-.0035
.001			.0101	.0079		.1026	.0296	.1919	.0212		
.002							.0079		.0182		
.003							.2999		.2571		
.004							.0692		.0414		
.005							.0141		.0162		
.025					.0281	.0175		.0215			
.045					.0278						
.100							.0134		.0186	.0182	
.153	.0141										
.177						.0253					
.200					.0141						
.299	.0131										
.302					.0536			.0236			
.428							.0792				
.444	.0020										
.487						.0987					
.559					.1099						
.600							.0671				

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 151

UPWT 1059 (IH4) 01-T15-S3N16 ORB. LOWER WING

(RQ3LAE)

MACH (2) = 4.600 ALPHA (1) = -5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE C_p/C_{ps}

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7510	.8500	.9500	.9980
X/CH										
.700							.0342			
.736	.1368									
.800						.0171				
.850						.0128				
.900					-.0035	.0109	.0036		-.0056	

MACH (2) = 4.600 ALPHA (2) = .000 PINF = .16570 Q(PSI) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE C_p/C_{ps}

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7510	.8500	.9500	.9980
X/CH										
.000						.1681		.2107		-.0124
.001	.0053	-.0017		.1035	.0256	.1693	.0308			
.002					.0146		.0147			
.003					.2238		.2407			
.004					.0594		.0562			
.005					.0142		.0177			
.025				.0061	.0168	.0253				
.045				.0053						
.100						.0174	.0171	.0223		
.153	.0079									
.177					.0197					
.200				.0130						
.299	.0016									
.302				.0352		.0261				
.428						.0487				
.444	-.0025									
.487					.0675					
.559				.0709						
.600						.0463				
.700						.0230				
.736	.0873									
.800						.0115				
.850						.0068				
.900				-.0113		.0016	-.0004		-.0052	

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TABULATED SOURCE DATA - IH4

PAGE 152

UPWT 1059 (IH4) 01-T15-SEN16 ORB. VERT. TAIL

(RQ3VAE) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 BETA = 5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32925 Q(PS1) = 3.1551 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CF/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV
 .000 .4431 .6014 .4540 .6508
 .300 .0551 .0550 .0567
 .500 .0494
 .700 -.0065
 .900 -.0028 -.0044 .0031

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32925 Q(PS1) = 3.1551 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CF/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV
 .000 .3920 .3247 .2322 .3665
 .300 .0055 -.0038 .0032
 .500 -.0065
 .700 -.0272
 .900 -.0284 -.0257 -.0200

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .16570 Q(PS1) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CF/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV
 .000 .4179 .3678 .3339 .5117
 .300 .0251 .0214 .0236
 .500 .0175
 .700 -.0098
 .900 -.0092 -.0066 -.0011

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 153

UPWT 1059 (IH4) 01-T15-S8N16 ORB. VERT. TAIL

(RQ3VAE)

MACH (2) = 4.600 ALPHA (2) = .000 PINF = .16573 Q(P51) = 2.4540 RN/L = 3.0000 CPST6 = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP'CP5

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3919 .3534 .2126 .3476

.300 .0078 .0022 .0099

.500 -.0027

.700 -.0170

.900 -.0180 -.0157 -.0122

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 154

UPWT 1059 (1H4) 01-T15-S8M16 EXTERNAL TANK

(RQ3TAE) (15 APR 76)

REFERENCE DATA

```

SREF = 2690.0000 SQ.FT.   XMRP = .0000 INCHES
LREF = 1290.3000 INCHES   YMRP = .0000 INCHES
BREF = 1290.3000 INCHES   ZMRP = .0000 INCHES
SCALE = .0100

```

PARAMETRIC DATA

RN/L = 3.000 BETA = 5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32925 Q(PS1) = 3.1551 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 155

UPWT 1059 (1H4) 01-T15-SBN*6 EXTERNAL TANK

(RQ3TAE)

MACH (1) = 3.700 ALPHA (1) = -5.000

SECTION (1)EXTERNAL TANK

DEPENDENT VARIABLE CP/CP5

X/LT	.9250	.9350	.9370	.9750
------	-------	-------	-------	-------

THETA			
151.000	.2544		
180.000		.2880	-.0255
210.000		.4886	

MACH (1) = 3.700 ALPHA (2) = .000 PINE = .32925 Q(PSI) = 3.1551 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT	.0000	.0050	.0100	.0400	.0800	.1500	.2000	.2500	.2750	.3000	.3250	.3350	.3500	.3750	.4000
------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

[illegible]

X/LT	.4250	.4500	.4750	.5000	.5250	.5500	.5750	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 156

UPWT 1059 (1H4) 01-T15-98N16 EXTERNAL TANK

(RQ3TAE)

MACH (1) = 3.700 ALPHA (2) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT	.9250	.9350	.9370	.9750
------	-------	-------	-------	-------

THETA				
123.000	.0884			
151.000		.1481		
180.000			.1537	-.0324
210.000			.3612	

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .16570 Q(PS1) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE C²/CPS

X/LT	.0000	.0050	.0100	.0400	.0800	.1500	.2000	.2500	.2750	.3000	.3250	.3350	.3500	.3750	.4000
------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

[illegible]

X/LT	.4250	.4500	.4750	.5000	.5250	.5500	.5750	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

[illegible]

DATE 20 APR 76

INSULATED SOURCE DATA - IH4

PAGE 157

UPWT 1059 (IH4) 01-T15-SHIN16 EXTERNAL TANK

(RQ3TAE)

MACH (2) = 4.600 ALPHA (1) = -5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/L1 .9250 .9350 .9370 .9750

THETA
 123.000 .1119
 151.000 .1839
 180.000 .2147 -.0154
 210.000 .4429

MACH (2) = 4.600 ALPHA (2) = .000 PINF = .16570 Q(PSI) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA
 .000 .3337 .1975 .0534 .0099
 45.000 -.0100
 67.500 .0073 -.0152
 90.000 -.0104 -.0043 -.0030 .0199 .4252 .0199 -.0108
 112.500 -.0030 -.0023 -.0108 .0080 -.0111
 135.000 .0005 -.0043 .0025 .0155
 157.500 .0608
 167.000 .0303
 180.000 .9878 .6615 .6611 .3006 .2010 .0572 .0105 -.0034 -.0003 .0175 .0298 .0420
 197.000 .2060 .0739 .0128
 210.000 .0801 .0460
 220.000 .0303
 225.000 .0425
 232.000 .1145

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA
 .000 -.0090 -.0052
 45.000 -.0043 -.0103 .0014
 67.500 .0034 -.0036 -.0064 -.0047 -.0046 .0165
 90.000 -.0166 -.0139 -.0081 -.0021 .0013 -.0008 -.0022 -.0018 .0334
 112.500 -.0152 -.0135 .0022 .0034 .0059 .0121 .0095 .0108 .0207 .0754
 123.000 .0346 .0349 .0124 .0009 .0023 -.0026 .0008 .0118 .0298 .0493 .0636
 135.000 .0311 .0237 -.0086 -.0060 -.0117 .0013 -.0119 -.0099 -.0041 .0126 .0187 .0566
 157.500 .0176 .0460 .0464 .0193 .0132 .0189 .0330 .0149 .0172 .0107 .0112 .0060 .0430 .1144
 161.000 .0464 .1014 .0193 .0132 .0189 .0330 .0149 .0172 .0107 .0112 .0060 .0430 .1144
 166.000 .0460 .0464 .0193 .0132 .0189 .0330 .0149 .0172 .0107 .0112 .0060 .0430 .1144
 180.000 .1512 .1565 .0613 .0464 .0193 .0132 .0189 .0330 .0149 .0172 .0107 .0112 .0060 .0430 .1144
 197.000 .1014 .0193 .0132 .0189 .0330 .0149 .0172 .0107 .0112 .0060 .0430 .1144
 210.000 .3483 .0417 .0338 .0153
 220.000 .0338 .0153
 232.000 .0153

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 158

UPWT 1059 (IH4) 01-T15-S8416 EXTERNAL TANK

(RQ3TAE)

MACH (2) = 4.600 ALPHA (2) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000

.0896

151.000

.1390

180.000

.1380 -.0143

210.000

.2924

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 159

UPWT 1059 (IH4) 01-T15-S8M16 SOLID RCKT. BSTR.

(RQ3SAE) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 BETA = 5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32925 Q(PSI) = 3.1551 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	.9710		.0484	.0407		.0408					.0494		-.0434		
180.000				.2330		.2072							.0541		
225.000										.0594			.0669		.0424
247.500												.0416	.0839	.0452	.0317
260.000								.6739							
270.000		.2405	.1413	.0799	.0843	.1371	.3063		-.0200	-.0255	-.0162	-.0081	.0259	-.0041	-.0104
315.000												-.0441			

X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 .9600 .9900

PSI															
90.000	-.0415	.0011	-.0346				-.0169					-.0342			
180.000	.0032	.3036	.2050	-.0116			.0325				.0204	-.0083			
210.000					.0160	.1795									
215.000							.0204		-.0333			-.0432			
225.000		.3985	.0085	-.0269								-.0289			
240.000							.0133					-.0248	.0014		
247.500	.0149						-.0294								
270.000	-.0128	.2105	-.0303	-.0354				-.0331					.0597		
315.000	-.0227														

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32925 Q(PSI) = 3.1551 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.0133		.0595	.0591		.0569							-.0177		
180.000				.1034		.0931							.0211		
225.000													.0402		.0057
247.500													-.0247	.0253	.0023
260.000								.5524							
270.000		.2525	.1546	.1123	.1268	.1064	.2704		-.0219	-.0132	-.0295	-.0281	-.0069	-.0182	-.0121
315.000												-.0310			

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TABULATED SOURCE DATA - 1H4

PAGE 160

UPWT 1059 (1H4) 01-T15-S8N16 SOLID RCKT. BSTR.

(RQ35AE)

MACH (1) = 3.700 ALPHA (2) = .000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

PSI

[illegible]

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .16570 Q(PS1) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

PSI

[illegible]

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

PSI

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 161

UPWT 1059 (IH4) 01-T15-S8N16 SOLID RCKT. BSTR.

(RQ3SAE)

MACH (2) = 4.600 ALPHA (2) = .000 PINF = .16570 Q(PSI) = 2.4540 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.1240		.0646	.0621		.0588							-.0148		
180.000				.1049		.0870							.0009		
225.000													.0234		.0160
247.500													.0191	.0140	.0103
260.000															
270.000		.2843	.1722	.0966	.1368	.1029	.2203	.3595	-.0034	-.0019	-.0156	-.0129	-.0092	-.0065	-.0072
315.000												-.0196			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	-.0017	.0570	-.0046					.0290					.0234		
180.000	-.0028	.2589	.0448	.0045				.0217					-.0011	-.0123	
210.000					.0131	.0664		.0048							
215.000							.0103								
225.000		.3349	.0009	-.0098					-.0072				-.0131		
240.000								.0079					.0011		
247.500	.0120							.0070					.0039	.0043	
270.000	-.0031	.2080	-.0074	-.0119											
315.000	-.0099							-.0039						.0554	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 162

UPWT 1059 (IH4) 01-T22-SBN10 ORBITER FUSELAGE

(RQ3888) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 BETA = .000

MACH (1) = 3.700 ALPHA (1) = -10.000 PINF = .32910 Q(P51) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CFS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	1.2468	.5350	.1859	.1052		.0716	.0577	.0583		.0978					
10.000								.0577							
20.000								.0541							
24.500								.0496							
39.000								.0887							
163.000														.5936	
174.000															
180.000	1.2468				.4076			.3411	.3350	.3763	.9061	1.0240	1.0129		.9410
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.1188	.0761	.0726	.0479	.0323		.0428				-.0205		-.0340	-.0360	
23.000		.0745													
24.000		.0965													
31.500		.0917													
33.100			.0845												
35.000		.0810													
40.000		.0722	.0972												
45.000			.0900												
50.000		.0697													
51.600														.0570	
57.000			.0375												
60.900			.0313												
65.000			.0280												
68.000														.0269	
69.000		.0174													
79.300					.0331										
95.500					.0405		.0331								
95.700		.0167													
96.300	.0672														
103.000					.0457										
105.000															-.0324
112.600					.0450										
117.500												.0365		.0406	
120.800									.1321						
127.900						.3394									
129.500								.3116							

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TABULATED SOURCE DATA - IH4

PAGE 163

UPWT 1059 (IH4) 01-T22-S3N16 ORBITER FUSELAGE

(RQ3888)

MACH (1) = 3.700 ALPHA (1) = -10.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
130.000									.2253	.0680		.0304			
135.000		-.0008			.0332										
139.600									.2333						
144.000												.0654			
155.000	.2617														
180.000	.1695	.0168			.0329										

X/LB 1.0250 1.0500

PHI

.000 -.0359 -.0359

MACH (1) = 3.700 ALPHA (2) = -5.000 PINF = .32910 Q(PST) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	1.0512	.4659	.1565	.0817		.0513	.0436	.0546		.1005					
10.000								.0543							
20.000								.0527							
24.500								.0502							
39.000								.0639							
163.000														.4764	
174.000												.8372			
180.000	1.0512				.2946			.2382	.2340	.2648	.7226		.8365		.7887

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.1024	.0586	.0522	.0283	.0119		.0034				-.0317		-.0367	-.0404	
23.000		.0626													
24.000	.0749														
31.500	.0677														
33.100		.0832													
35.000	.0736														
40.000	.0593	.0839													
45.000		.0827													
50.000	.0583														
51.600															
57.000		.0221													
60.900		.0218													
65.000		.0169													
68.000															

PHI

.000 .1024 .0586 .0522 .0283 .0119

23.000 .0626

24.000 .0749

31.500 .0677

33.100 .0832

35.000 .0736

40.000 .0593

45.000 .0827

50.000 .0583

51.600

57.000 .0221

60.900 .0218

65.000 .0169

68.000

.0169

-.0032

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 164

UPWT 1059 (IH4) 01-T22-SEN16 ORBITER FUSELAGE

(RQ3888)

MACH (1) = 3.700 ALPHA (2) = -5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CF/CPS

[illegible]

X/LB	1.0250	1.0500
------	--------	--------

PHI
.000 -.0397 -.0393

MACH (1) = 3.700 ALPHA (3) = .000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 165

UPWT 1059 (IH4) 01-T22-S8116 ORBITER FUSELAGE

(RQ3888)

MACH (1) = 3.700 ALPHA (3) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP, CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
24.000	.0331														
31.500	.0309														
33.100		.0569													
35.000	.0276														
40.000	.0288	.0605													
45.000		.0648													
50.000	.0483														
51.600															
57.000		.0204													
60.900		.0120													
65.000		.0079													
68.000															
69.000		.0054													
73.300															
95.500															
95.700															
96.300	.0401														
103.000															
105.000															
112.600															
117.500															
120.800															
127.900															
129.500															
130.000															
135.000															
139.600															
144.000															
155.000	.1438														
180.000	.1001	.0016													
X/LB	1.0250	1.0500													
PHI															
.000	-.0422	-.0404													

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OF POOR QUALITY

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 165

UPWT 1059 (IH4) 01-T22-SBN:6 ORBITER FUSELAGE

(RQ3BBB)

MACH (1) = 3.700 ALPHA (4) = 5.000 PINF = .32910 Q(PS1) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/ CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 167

UPWT 1059 (IH4) 01-T22-S8N*6 ORBITER FUSELAGE

(RQ3888)

MACH (1) = 3.700 ALPHA (4) = 5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0500

PHI

.000 -.0358 -.0341

MACH (2) = 4.600 ALPHA (1) = -10.000 PINF = .16570 Q(PST) = 2.4551 RN/L = 3.0050 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 .1250 .1500 .1600 .1650 .1700 .1750 .1800

PHI

.000	1.4326	.6063	.2021	.1109		.0868	.1030	.0915		.0943				
10.000								.0883						
20.000								.0851						
24.500								.0811						
39.000								.0998						

163.000													.5955	
174.000														
180.000	1.4326				.4455		.2963	.2874	.3213	.9024	1.0703	1.0556		.8519

X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI

.000	.0565	.0792	.0460	.0583	.0391		.0386				-.0110		-.0197	-.0205
23.000		.0780												
24.000	.0481													
31.500	.0616													
33.100		.0684												
35.000	.0744													
40.000	.0724	.0577												
45.000		.0529												
50.000	.0752													
51.600														
57.000		.0275											.0449	
60.900		.0277												
65.000		.0207												
68.000													.0254	
69.000		.0169												
79.300					.0292									
95.500					.0303		.0328							
95.700		.0179												
96.300	.0880													
103.000					.0306									
105.000														-.0217
112.600					.0283									
117.500														
120.800								.1342			.0340		.0367	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 169

UPWT 1059 (IH4) 01-T22-S8N16 ORBITER FUSELAGE

(RQ3888)

MACH (2) = 4.600 ALPHA (2) = -5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.8900	.9530	.9750	1.0000	1.0145
PHI															
65.000		.0138													
68.000													-.0037		
69.000		.0085													
78.300					.0145										
95.500					.0159		.0021								
95.700		.0062													
96.300	.0647														
103.000					.0142										
105.000															-.0269
112.600					.0034										
117.500												.0220		.0233	
120.800									.1396						
127.900						.1334									
129.500								.1587							
130.000									.1643	.0777		.0224			
135.000		-.0035			-.0026										
139.600									.1593						
144.000												.0397			
155.000	.2307														
180.000	.1665	.0187			.0180										
X/LB	1.0250	1.0500													
PHI															
.000	-.0229	-.0222													

MACH (2) = 4.600 ALPHA (3) = .000 PINF = .16570 Q(PSI) = 2.4551 RN/L = 3.0050 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9113	.4220	.2136	.1295		.0890	.0690	.0603		.0150					
10.000								.0555							
20.000								.0525							
24.500								.0521							
39.000								.0671							
163.000														.3550	
174.000															
180.000	.9113				.2013			.1526	.1539	.1744	.4886	.6084	.6554		.6542

DATE 20 APR 76

TABULATED SOURCE DATA - 1944

PAGE 170

UPWT 1059 (1H4) 01-T22-S3N16 ORBITER FUSELAGE

(RQ3888)

MACH (2) = 4.600 ALPHA (3) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

PAGE 171

(RQ3BBB)

DEPENDENT VARIABLE CF /CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 172

UPWT 1059 (IH4) 01-T22-S8416 ORBITER FUSELAGE

(RQ3BBB)

MACH (2) = 4.600 ALPHA (4) = 5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP'CP5

X/LB 1.0250 1.0500

PHI
.000 -.0251 -.0244

DATE 20 APR 78

TABULATED SOURCE DATA - IH4

PAGE 173

UPWT 1059 (IH4) 01-T22-S6N16 ORB. UPPER WING

(RQ3UBB) (15 APR 78)

REFERENCE DATA

SREF = 2890.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 BETA = .060

MACH (1) = 3.700 ALPHA (1) = -10.000 PINF = .32910 Q(P51) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1732		
.200	.0334	.0597	.1415
.600	-.0229	-.0250	
.800		-.0262	
.900		.0398	-.0048
.950		-.0163	

MACH (1) = 3.700 ALPHA (2) = -5.000 PINF = .32910 Q(P51) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1098		
.200	.0164	.0345	.1044
.600	-.0327	-.0334	
.800		-.0340	
.900		.0402	-.0157
.950		-.0241	

MACH (1) = 3.700 ALPHA (3) = .000 PINF = .32910 Q(P51) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0697		
.200	.0003	.0168	.0684
.600	-.0399	-.0380	
.800		-.0376	
.900		.0439	-.0224
.950		-.0273	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 174

UPWT 1059 (IH4) 01-T22-SBN 6 ORB. UPPER WING

(RQ3UBB)

MACH (1) = 3.700 ALPHA (4) = 5.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/(PS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0468		
.200	-.0174	-.0029	.0370
.600	-.0436	-.0427	
.800		-.0425	
.900		.0405	-.0309
.950		-.0285	

MACH (2) = 4.600 ALPHA (1) = -10.000 PINF = .16570 Q(PSI) = 2.4551 RN/L = 3.0050 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/(PS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1751		
.200	.0440	.0691	.1626
.600	-.0127	-.0127	
.800		-.0157	
.900		.0396	.0152
.950		-.0056	

MACH (2) = 4.600 ALPHA (2) = -5.000 PINF = .16570 Q(PSI) = 2.4551 RN/L = 3.0050 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/(PS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1040		
.200	.0207	.0464	.1110
.600	-.0197	-.0139	
.800		-.0141	
.900		.0425	.0061
.950		-.0064	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 175

UPWT 1059 (IH4) 01-T22-SBN16 ORB. UPPER WING

(RQ3UBB)

MACH (2) = 4.600 ALPHA (3) = .000 PINF = .16570 Q(PSI) = 2.4551 RN/L = 3.0050 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0626		
.200	-.0033	.0149	.0658
.600	-.0230	-.0211	
.800		-.0211	
.900		.0403	-.0053
.950		-.0057	

MACH (2) = 4.600 ALPHA (4) = 5.000 PINF = .16570 Q(PSI) = 2.4551 RN/L = 3.0050 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0390		
.200	-.0136	.0017	.0367
.600	-.0270	-.0248	
.800		-.0248	
.900		.0394	-.0077
.950		-.0098	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 176

UPWT 1059 (IH4) 01-T22-SBN111 ORB. LOWER WING

(RQ3LBB) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 3.000 BETA = .000

MACH (1) = 3.700 ALPHA (1) = -10.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CFS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.3075		.3512		.0108
.001		.0690	.0425		.2005	.0596	.2932	.0366		
.002						.0266		.0368		
.003						.5001		.4640		
.004						.0987		.0729		
.005						.0399		.0345		
.025				.0444	.0354		.0421			
.045				.0473						
.100						.0212		.0409	.0357	
.153	.0587									
.177					.0280					
.200				.0226						
.299	.0369									
.302				.0646			.0366			
.428						.0366				
.444	.0358									
.487					.0519					
.559				.0468						
.600						.0261				
.700						.0162				
.736	.0417									
.800						-.0026				
.850						-.0039				
.900				-.0104		-.0189	-.0203		-.0155	

MACH (1) = 3.700 ALPHA (2) = -5.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CFS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.2580		.3371		.0040
.001		.0458	.0252		.1708	.0483	.2726	.0384		
.002						.0158		.0230		
.003						.3974		.4259		
.004						.0773		.0739		
.005						.0265		.0227		

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 177

UPWT 1059 (IH4) 01-T22-SBN16 ORB. LOWER WING

(RQ3LBB)

MACH (1) = 3.700 ALPHA (2) = -5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.025				.0311	.0296		.0386			
.045				.0327						
.100						.0086		.0311	.0380	
.153	.0346									
.177					-.0062					
.200				-.0004						
.299	.0153									
.302				.0060			.0281			
.428						.0358				
.444	.0121									
.487					.0419					
.559				.0310						
.600						.0254				
.700						.0106				
.736	.0235									
.800						-.0059				
.850						-.0152				
.900				-.0190		-.0221	-.0199		-.0177	

MACH (1) = 3.700 ALPHA (3) = .000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0800 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.2450		.3481		-.0048
.001		.0208	.0050		.1548	.0489	.2880	.0636		
.002						.0184		.0441		
.003						.3444		.3848		
.004						.0882		.1060		
.005						.0297		.0444		
.025				.0236	.0282		.0544			
.045				.0260						
.100						.0123		.0529	.0624	
.153	.0154									
.177					-.0048					
.200				-.0075						
.299	.0044									
.302				-.0080			.0365			
.428						.0267				
.444	-.0069									
.487					.0388					
.559				.0223						
.600						.0270				

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OF POOR QUALITY

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 178

UPWT 1059 (IH4) 01-T22-SBN16 ORB. LOWER WING

(RQ3LBB)

MACH (1) = 3.700 ALPHA (3) = .000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.700

.0111

.736

.0036

.800

-.0031

.850

-.0115

.900

-.0204

-.0183

-.0153

-.0144

MACH (1) = 3.700 ALPHA (4) = 5.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000

.3257

.3916

-.0284

.001

.0022

-.0035

.2247

.0966

.3737

.1347

.002

.0563

.1008

.003

.3676

.3461

.004

.1504

.1915

.005

.0737

.1093

.025

.0263

.0774

.1056

.045

.0284

.0463

.1098

.1089

.100

.153

.0028

.177

.0186

.200

.0037

.299

-.0072

.0064

.0875

.302

.0064

.428

.0463

.444

-.0133

.487

.0301

.559

.0088

.600

.0290

.700

.0136

.736

.0021

.800

.0018

.850

-.0059

.900

-.0199

-.0128

-.0051

.0100

PAGE 179

(RQ3LBB)

DEPENDENT VARIABLE CP/CPS

X/CW

DEPENDENT VARIABLE CP/CPS

X/CW

.000				.2873		.3876		.0105
.001	.0467	.0297	.1810	.0603	.3097	.0623		
.002				.0271		.0409		
.003				.4173		.4709		
.004				.1096		.1018		
.005				.0399		.0450		
.025		.0331	.0376		.0557			
.045		.0305						
.100				.0193		.0448	.0508	
.153	.0452							
.177			.0022					
.200		.0060						
.299	.0165							

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 189

UPWT 1059 (IH4) 01-T22-SBN16 ORB. LOWER WING

(RQ3LBB)

MACH (2) = 4.600 ALPHA (2) = -5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.302				.0084			.0226			
.428						.0080				
.444	.0185									
.487					.0182					
.559				.0297						
.600						.0182				
.700						.0176				
.736	.0212									
.800						.0063				
.850						-.0006				
.900				-.0041		-.0060	-.0091		-.0138	

MACH (2) = 4.600 ALPHA (3) = .000 PINF = .16570 Q(PS1) = 2.4551 RN/L = 3.0050 CPST6 = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.2421		.3465		-.0007
.001		.0233	.0113		.1551	.0521	.2740	.0646		
.002						.0225		.0394		
.003						.3268		.3892		
.004						.0942		.1079		
.005						.0337		.0445		
.025				.0240	.0364		.0529			
.045				.0233						
.100						.0146		.0480	.0600	
.153	.0225									
.177					-.0014					
.200				.0000						
.299	.0034									
.302				-.0014			.0309			
.428						.0146				
.444	.0020									
.487					.0081					
.559				.0007						
.600						.0136				
.700						.0016				
.736	-.0072									
.800						-.0082				
.850						-.0125				
.900				-.0102		-.0153	-.0124		-.0052	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 181

UPWT 1059 (IH4) 01-TR2-S8N16 ORB. LOWER WING

(R03LBB)

MACH (2) = 4.600 ALPHA (4) = 5.000 PINF = 16570 Q(PSI) = 2.4551 RN/L = 3.0050 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/8W	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.3143		.3794		-.0135
.001		.0096	.0025		.1920	.0990	.3940	.1440		
.002						.0612		.1048		
.003						.3493		.3416		
.004						.1528		.1890		
.005						.0788		.1157		
.025				.0216	.0649		.1307			
.045				.0235						
.100						.0584		.1087	.0986	
.153	.0115									
.177					.0225					
.200				.0075						
.299	.0010									
.302				.0068			.0647			
.428						.0408				
.444	-.0048									
.487					.0208					
.559				.0010						
.600						.0208				
.700						.0063				
.736	-.0065									
.800						-.0032				
.850						-.0084				
.900				-.0095		-.0126	-.0036		.0107	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 122

UPWT 1059 (IH4) 01-T22-S0N16 ORB. VERT. TAIL

(RQ3VBB) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 3.000 BETA = .000

MACH (1) = 3.700 ALPHA (1) = -10.000 PINF = .32910 Q(P51) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV
 .000 .4100 .6026 .5046 .6636
 .300 .2104 .1111 .0881
 .500 .1527
 .700 .0413
 .900 .0173 .0261 .0083

MACH (1) = 3.700 ALPHA (2) = -5.000 PINF = .32910 Q(P51) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV
 .000 .4823 .4068 .3826 .5056
 .300 .1151 .0875 .0511
 .500 .1021
 .700 .0280
 .900 -.0038 .0165 -.0054

MACH (1) = 3.700 ALPHA (3) = .000 PINF = .32910 Q(P51) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV
 .000 .4084 .3411 .3014 .3596
 .300 .0855 .0535 .0307
 .500 .0612
 .700 .0080
 .900 -.0149 -.0003 -.0125

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 183

UPWT 1059 (IH4) 01-T2?-S6N16 ORB. VERT. TAIL

(RQ3VBB)

MACH (1) = 3.700 ALPHA (4) = 5.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3321	.3090	.2273	.2820
.300	.0483	.0345	.0300	
.500		.0395		
.700		-.0082		
.900	-.0265	-.0141	-.0196	

MACH (2) = 4.600 ALPHA (1) = -10.000 PINF = .16570 Q(PSI) = 2.4551 RN/L = 3.0050 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.4050	.6372	.5546	.7356
.300	.1240	.0831	.0806	
.500		.0939		
.700		.0299		
.900	.0188	.0230	.0057	

MACH (2) = 4.600 ALPHA (2) = -5.000 PINF = .16570 Q(PSI) = 2.4551 RN/L = 3.0050 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3938	.3679	.3645	.5161
.300	.0701	.0551	.0473	
.500		.0625		
.700		.0245		
.900	.0046	.0181	-.0001	

MACH (2) = 4.600 ALPHA (3) = .000 PINF = .16570 Q(PSI) = 2.4551 RN/L = 3.0050 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3615	.3426	.2344	.3434
.300	.0507	.0301	.0248	
.500		.0309		
.700		-.0021		
.900	-.0060	-.0052	-.0101	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 184

UPWT 1059 (IH4) 01-T22-S9N16 ORB. VERT. TAIL

(RQ3VBB)

MACH (2) = 4.600 ALPHA (4) = 5.000 PINF = .16570 Q(PSI) = 2.4551 RN/L = 3.0050 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3004	.2559	.1853	.2623
.300	.0356	.0212	.0124	
.500		.0212		
.700		-.0091		
.900	-.0144	-.0121	-.0148	

TABULATED SOURCE DATA - IN4

PAGE 185

(RQ3TEB) (15 APR 76)

PARAMETRIC DATA

RN/L 3.000 BETA .000

MACH (1) = 3.700 ALPHA (1) = -10.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

DEPENDENT VARIABLE CP/CP5

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 186

UPWT 1059 (IH4) 01-T22-S8N16 EXTERNAL TANK

(RQ3TBB)

MACH (1) = 3.700 ALPHA (1) = -10.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

151.000

.0370

180.000

.0299 -.0280

210.000

.0325

MACH (1) = 3.700 ALPHA (2) = -5.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000

.2634 .1416 .0209

.0016

45.000

-.0115

67.500

-.0364

90.000

-.0017 -.0102 -.0012 -.0118

-.0204

-.0174

112.500

.1394 .3759 .0106

.0175

135.000

.0047 .0116 .0116 .0597

.0100

157.500

.0199 .0298 .0002

.0423

167.000

.0491

180.000

.9815 .6520 .5926 .4345 .2768 .0970 .0296 .0099 .0075 .0079 .0103 .0509

197.000

.2799 .0980

210.000

.0939

.0240

220.000

.0003

225.000

.0268

232.000

.0595

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000

-.0074

-.0188

45.000

-.0316

-.0169

-.0006

67.500

-.0308

-.0317

-.0249

-.0183

-.0164

.0020

90.000

-.0260

-.0438

-.0297

-.0060

.0110

.0093

.0036

-.0077

.0067

112.500

-.0038

-.0014

.0146

.0255

.0527

.0581

.0479

.0383

.0229

.0212

.0138

123.000

.0503

.0615

.0831

.0557

.0364

.0241

.0194

.0326

.0247

.0200

.0143

135.000

.0942

.1038

.0865

.0388

.0441

.0348

.0289

.0116

.0026

.0038

-.0013

161.000

.1131

166.000

.1031

.0350

180.000

.1550

.1550

.0997

.1062

.0368

.0643

.0684

.0455

.0331

.0312

.0148

.0071

197.000

.0918

.0279

.0443

.0152

.0238

.0110

-.0051

-.0083

210.000

.1028

.0025

220.000

232.000

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 187

UPWT 1059 (IH4) 01-T72-S8N16 EXTERNAL TANK

(RQ3TE2)

MACH (1) = 3.700 ALPHA (2) = -5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .0128

151.000 .0069

180.000 -.0076 -.0363

210.000 .0029

MACH (1) = 3.700 ALPHA (3) = .000 PINF = .32910 Q(P51) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000 .3434 .2025 .0570 .0201

45.000 .0009

67.500 .0211

90.000 .0117

112.500 .0178

135.000 .0021

157.500 .0076

167.000 .0265

180.000 .9806 .5437 .4976 .3482 .2055 .0560 .0039 .0042 .0055 .0069 .0052 .0097 .0293

197.000 .0044

210.000 .0141

220.000 .0159

225.000 .0069

232.000 .0159

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000 -.0017 -.0086 .0094

45.000 -.0151 .0002 .0397

67.500 -.0169 -.0028 .0009 .0007 .0041 .0199

90.000 -.0307 -.0344 -.0288 -.0036 -.0014 -.0057 -.0106 .0050

112.500 -.0280 -.0293 -.0203 -.0099 .0137 .0301 .0263 .0217 .0155 .0090 .0039 .0012

123.000 .0090 .0100 .0438 .0089 .0276 .0124 .0103 .0023 .0010 .0032 .0007 .0013

135.000 .0493 .0372 .0438 .0606 .0396 .0280 .0196 .0041 -.0034 -.0160 -.0177 -.0164

157.500 .0090 .0372 .0438 .0606 .0396 .0280 .0196 .0041 -.0034 -.0160 -.0177 -.0164

161.000 .0493

166.000 .0682

180.000 .0937 .1140 .0951 .0747 .0451 .0221 .0303 .0461 .0322 .0142 .0030 -.0105 -.0182 -.0244

197.000 .0699 .0182 .0015 .0074

210.000 .0362

220.000

232.000

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DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 16B

UPWT 1059 (IH4) 01-T22-S8N16 EXTERNAL TANK

(RQ3TBB)

MACH (1) = 3.700 ALPHA (3) = .000

SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA
123.000 .0032
151.000 -.0094
180.000 -.0275 -.0410
210.000 -.0112

MACH (1) = 3.700 ALPHA (4) = 5.000 PINF = .32910 Q(PST) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA
.000 .4316 .2732 .0943 .0402
45.000 .0161
67.500 .0100
90.000 -.0093
112.500 -.0015 -.0055 -.0004 .0132 .0490 .0223
135.000 -.0071 -.0098 .0354 -.0103 -.0344
157.500 -.0074 -.0136 -.0133 -.0128
167.000 .0019
180.000 .9798 .4490 .4053 .2713 .1447 .0229 -.0142 -.0057 -.0057
197.000 .1493 .0257 -.0030 .0136
210.000 .0266
220.000 -.0033
225.000 -.0106
232.000 -.0071 -.0199

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA
.000 .0145 .0057
45.000 .0081 .0048 .0111
67.500 .0011 .0025 .0059 .0124 .0177 .0238
90.000 -.0243 -.0299 -.0293 -.0207 .0186 .0307 .0238 .0170 .0308
112.500 -.0384 -.0384 -.0334 -.0154 .0058 .0196 .0223 .0198 .0110 .0182
123.000 .0049 .0012 .0059
135.000 -.0259 -.0194 -.0165 -.0030 -.0025 -.0056 .0008 -.0030 -.0028 -.0005
157.500 -.0016 .0098 .0301 .0232 .0057 .0291 .0013 .0035 -.0123 -.0204 -.0167 .0123
161.000 .0053
166.000 .0477
180.000 .0502 .0998 .0877 .0981 .0353 -.0030 .0584 .0482 .0133 .0102 -.0114 -.0155 -.0216 -.0176
197.000 .0301
210.000 .0186 .0003
220.000 -.0040
232.000 -.0277 .0057

DATE 20 APR 76

ABULATED SOURCE DATA - IH4

PAGE 169

UPWT 1059 (IH4) 01-T22-S8N16 EXTERNAL TANK

(RQSTB3)

MACH (1) = 3.700 ALPHA (4) = 5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA
123.000 .0365
151.000 .0057
180.000 -.0072 -.0302
210.000 -.0038

MACH (2) = 4.600 ALPHA (1) = -10.000 PINF = .16570 Q(PST) = 2.4551 RN/L = 3.0050 CPST6 = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA
.000
45.000 .1694 .0791 .0006
67.500
90.000 .0011 .0003 .0058 -.0099 -.0194
112.500 .0214 .3782 .0235 .0000
135.000 .0303 .1014 .0571
157.500 .0418 .0391 .0258 .0184
167.000 .0605
180.000 .9037 .6704 .6202 .4841 .3305 .1375 .0606 .0360 .0443 .0518 .0562 .0719
197.000 .3269 .1355
210.000 .1278
220.000 .0391
225.000 .0251
232.000 .0465 .0347

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA
.000
45.000 -.0090 -.0116
67.500 -.0274 -.0244
90.000 -.0137 -.0224 -.0225 -.0195 -.0190
112.500 .0227 .0339 .0266 .0140 .0114
123.000 .0330 .0367 .0415 .0587 .0744 .0599 .0498 .0428
135.000 .0480 .0997 .0721 .0528 .0384 .0490 .0566 .0487 .0396 .0376 .0355
157.500 .0890 .1200 .0815 .0876 .0688 .0400 .0477 .0497 .0391 .0366 .0358 .0369
161.000 .1021
166.000 .0964
180.000 .1222 .1694 .1283 .0999 .0885 .0579 .0522 .0296 .0564 .0425 .0470 .0393 .0296 .0286
197.000 .0942
210.000 .0589 .0501 .0432 .0335
220.000 .0820 .0450
232.000 .0564 .0455

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 198

UPWT 1059 (1H4) 01-T22-S6N16 EXTERNAL TANK

(RQ3TEB)

MACH (2) = 4.600 ALPHA (1) = -10.000

SECTION (1)EXTERNAL TANK	DEPENDENT VARIABLE CP/CPS
----------------------------	---------------------------

X/LT	.9250	.9350	.9370	.9750
------	-------	-------	-------	-------

THETA				
123.000	.0362			
151.000		.0386		
180.000			.0255	-.0152
210.000			.0296	

MACH (2) = 4.600 ALPHA (2) = -5.000 PINF = .16570 Q(PSI) = 2.4551 RN/L = 3.0050 CPSTG = 1.8033

SECTION (1)EXTERNAL TANK	DEPENDENT VARIABLE CP/CPS
----------------------------	---------------------------

X/LT	.0000	.0050	.0100	.0400	.0800	.1500	.2000	.2500	.2750	.3000	.3250	.3350	.3500	.3750	.4000
------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

[illegible]

X/LT	.4250	.4500	.4750	.5000	.5250	.5500	.5750	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 191

UPWT 1059 (IH4) 01-122-SB16 EXTERNAL TANK

(R03TB3)

MACH (2) = 4.600 ALPHA (2) = -5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .0241

151.000

.0117

180.000

-.0078

-.0275

210.000

.0051

MACH (2) = 4.600 ALPHA (3) = .000 PINF = .16570 Q(P51) = 2.4551 RN/L = 3.0050 CPSTG = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000

.3442

.2031

.0557

.0188

45.000

-.0065

67.500

-.0059

90.000

.0048

.0016

.0067

.0101

.0641

.3620

.0216

.0318

.0036

112.500

.0064

.0084

.0030

.0220

.0026

-.0065

-.0062

135.000

157.500

167.000

180.000

1.0007

.5360

.4913

.3417

.2000

.0550

.0097

.0094

.0107

.0111

.0094

.0098

.0185

197.000

.2038

.0575

210.000

.0583

.0024

220.000

-.0011

225.000

.0120

232.000

.0089

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000

.0000

-.0009

45.000

-.0070

-.0020

.0067

67.500

-.0049

-.0065

-.0031

-.0018

-.0039

.0203

90.000

-.0143

-.0171

-.0137

-.0093

.0013

.0012

.0051

.0012

.0051

.0203

.0208

.0107

.0182

112.500

-.0137

-.0147

-.0150

-.0039

-.0033

.0056

.0175

.0203

.0208

.0128

.0107

.0106

.0047

123.000

.0203

.0347

.0040

.0210

.0224

.0114

.0144

.0050

.0020

.0030

.0025

-.0052

-.0101

135.000

157.500

.0120

.0304

.0347

.0417

.0378

.0097

.0290

.0150

.0060

.0025

-.0052

-.0101

161.000

.0356

166.000

.0732

180.000

.0509

.1113

.0929

.0745

.0527

.0483

.0059

.0250

.0419

.0122

.0168

.0081

-.0041

-.0073

-.0055

197.000

.0640

210.000

.0170

220.000

.0251

.0159

232.000

.0094

.0001

ORIGINAL PAGE IS
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DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 192

UPNT 1059 (IH4) 01-22-58N16 EXTERNAL TANK

(RQ3TBB)

MACH (2) = 4.600 ALPHA (3) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA
123.000 .0113
151.000 .0025
180.000 -.0140 -.0275
210.000 -.0039

MACH (2) = 4.600 ALPHA (4) = 5.000 PINF = .16570 Q(PS1) = 2.4551 RN/L = 3.0050 CPSTG = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA
.000 .4343 .2802 .0914 .0400
45.000 -.0045
67.500 .0196
90.000 .0067
112.500 .0042 -.0001 .0057 .0808 .3552 .0349 .0174
135.000 -.0007 -.0024 .0152 .0006 -.0031
157.500 -.0018 -.0062 -.0055 .0090
167.000 .0050
180.000 1.0032 .4418 .3983 .2625 .1398 .0254 -.0055 .0011 .0008 -.0007 -.0011 .0116
197.000 .0283
210.000 .0307
220.000 .0006
225.000 -.0016
232.000 -.0099

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA
.000 .0181 .0103
45.000 .0095 .0091 .0197
67.500 .0096 .0058 .0068 .0088 .0099 .0265
90.000 -.0082 -.0137 -.0106 -.0101 -.0002 .0059 .0154 .0211 .0367
112.500 -.0177 -.0187 -.0171 -.0072 -.0060 .0025 .0075 .0163 .0158 .0261
123.000 .0105 .0076 .0179
135.000 -.0103 -.0187 -.0187 -.0093 .0003 .0020 .0038 -.0031 -.0029 .0037
157.500 .0002 .0041 .0129 .0063 .0063 .0305 .0125 .0107 .0029 -.0051 -.0062 -.0089
161.000 .0076
166.000 .0641
180.000 .0518 .1070 .0746 .0641 .0317 .0050 .0518 .0442 .0182 .0150 .0032 -.0011 -.0052 -.0094
197.000 .1189 .0256 .0115 .0157 .0085 .0014
210.000 -.0007
220.000
232.000 -.0125

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 193

UPWT 1059 (IH4) 01-T22-SBN16 EXTERNAL TANK

(RQ3TBB)

MACH (2) = 4.600 ALPHA (4) = 5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT	.9250	.9350	.9370	.9750
------	-------	-------	-------	-------

THETA

123.000	.0376			
---------	-------	--	--	--

151.000		.0103		
---------	--	-------	--	--

180.000			-.0110	-.0210
---------	--	--	--------	--------

210.000			-.0015	
---------	--	--	--------	--

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 194

UPWT 1059 (IH4) 01-T22-S8N16 SOLID RCKT. BSTR.

(RQ3SBB) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 BETA = .000

MACH (1) = 3.700 ALPHA (1) = -10.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.1376		.0977	.0911		.0950					.0527		-.0355		
180.000				.2754		.2403							.0917		
225.000										.0673			.0990		.0624
247.500												.0224	.0818	.0707	.0519
260.000								.9857							
270.000		.2860	.1737	.1055	.0732	.1807	.5884		-.0082	-.0203	-.0137	-.0128	.0181	.0170	.0006
315.000												-.0461			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	-.0355	.0033	-.0436					-.0146				-.0240			
180.000	.0312	.1649	-.0107	.0216				.1176			.0794	.0429			
210.000					.0302	.2330		.0587		.0195					
215.000							.0197		-.0271		-.0402				
225.000		.1273	.0195	-.0202				.0146			-.0064				
240.000								-.0256			-.0273	-.0265			
247.500	.0315														
270.000	-.0083	.2453	-.0268	-.0387				-.0355				.0404			
315.000	-.0357														

MACH (1) = 3.700 ALPHA (2) = -5.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.1782		.1027	.1011		.1025							-.0183		
180.000				.2002		.1687					.0124		-.0027		
225.000										.0135			.0594		.0509
247.500												-.0112	.0270	.0493	.0466
260.000								.5281							
270.000		.2889	.1818	.1076	.0956	.1741	.4481		-.0107	-.0092	-.0182	-.0309	-.0176	.0036	-.0027
315.000												-.0455			

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 193

UPWT 1059 (IH4) 01-T22-SBN16 SOLID RCKT. BSTR.

(RQ3S9B)

MACH (1) = 3.700 ALPHA (2) = -5.000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
PSI												
90.000	-.0224	.0209	-.0352					.0004				.0093
180.000	.0121	.1271	-.0253	.0030				.1050			.0799	.0397
210.000					.0082	.2089		.0600		.0084		
215.000							.0128		-.0305		-.0417	
225.000		.1081	.0001	-.0256				.0004			-.0057	
240.000								-.0203			-.0132	-.0054
247.500	.0153											
270.000	-.0142	.2407	-.0234	-.0306				-.0251				.0397
315.000	-.0203											

MACH (1) = 3.700 ALPHA (3) = .000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.1947		.1052	.1060		.1062								-.0054	
180.000				.1329		.1061								-.0198	
225.000										.0012	-.0128			-.0109	.0357
247.500												-.0301	-.0022	.0196	.0281
260.000								.4906							
270.000		.2944	.1874	.1105	.1181	.1773	.4251		-.0100	.0134	-.0195	-.0330	-.0122	-.0083	-.0083
315.000												-.0301			

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
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PSI												
90.000	.0004	.1004	-.0213					.0583				.0570
180.000	.0081	.1240	-.0257	-.0018				.0821			.0964	.0579
210.000					-.0033	.1530		.0609		.0128		
215.000							.0004		-.0332		-.0424	
225.000		.1085	-.0097	-.0256				-.0077			-.0099	
240.000								-.0201			-.0184	-.0036
247.500	.0088											
270.000	-.0030	.2104	-.0228	-.0332				-.0249				.0394
315.000	-.0017											

ORIGINAL PAGE IS
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UPWT 1059 (IH4) 01-T22-S8N16 SOLID RCKT. BSTR.

(RQ3S8B)

MACH (1) = 3.700 ALPHA (4) = 5.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.1766		.1032	.1047		.1066								-.0159	
180.000			.0777			.0619								-.0162	
225.000										-.0186				-.0154	.0231
247.500												-.0391		-.0218	.0157
260.000							.5320								
270.000		.2962	.1888	.1102	.1088	.1817	.4217		-.0093	-.0071	-.0179	-.0300	-.0271	.0035	.0269
315.000												-.0061			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	.0000	.0869	-.0149					.0582				.0635			
180.000	.0035	.0647	-.0192	.0313				.1085			.0985	.0667			
210.000					.0155	.2106		.0602		.0252					
215.000							.0034		-.0279		-.0367				
225.000		.1142	-.0226	-.0173				.0179			.0119				
240.000								-.0005			-.0056	-.0087			
247.500	.0146														
270.000	.0154	.1960	-.0232	-.0333				-.0120				.0408			
315.000	.0067														

MACH (2) = 4.600 ALPHA (1) = -10.000 PINF = .16570 Q(PSI) = 2.4551 RN/L = 3.0050 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.2185		.0949	.0859		.0896								-.0240	
180.000			.2724			.2337					.0415			.0422	
225.000										.0624				.0873	.0480
247.500											.0220		.0627	.0774	.0460
260.000							.4470								
270.000		.2981	.1847	.1082	.0824	.1831	.2692		.0032	-.0019	.0003	-.0046	.0090	.0268	.0108
315.000												-.0275			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	-.0269	.0292	-.0209					.0045				-.0077			
180.000	.0337	.1483	-.0015	.0298				.1102			.1028	.0671			
210.000					.0383	.2154		.0775		.0339					
215.000							.0259		-.0112		-.0211				
225.000		.1338	.0288	-.0031				.0163			.0064				
240.000								-.0133			-.0155	-.0081			

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UPWT 1059 (IH4) C1-T2E-S8N16 SOLID RCKT. BSTR.

(RQ35BB)

MACH (2) = 4.600 ALPHA (1) = -10.000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 .9600 .9900

PSI

247.500 .0323

270.000 .0032 .2078 -.0114 -.0242

-.0247

.0420

315.000 -.0221

MACH (2) = 4.600 ALPHA (2) = -5.000 PINF = .16570 Q(PSI) = 2.4551 RN/L = 3.0050 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB .0000 .0040 .0250 .0500 .0750 .1000 .1100 .1150 .1300 .1500 .2000 .3000 .4000 .5000 .6000

PSI

90.000 1.3346

.1021

.0990

.0999

-.0112

180.000

.2086

.1711

.0317

.0108

.0009

225.000

.0317

-.0042

.0111

.0406

247.500

.0111

.0443

.0406

260.000

.3290

.2031

.1151

.1019

.1771

.2719

.3340

.0033

.0037

-.0041

-.0161

-.0130

.0097

.0053

270.000

-.0262

315.000

X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 .9600 .9900

PSI

90.000 -.0117

.0408

-.0105

.0076

.0086

180.000

.0206

.0847

-.0094

.0103

.0630

.0563

210.000

.0162

.1742

.0605

.0180

.0849

215.000

.0273

-.0146

-.0226

225.000

.0997

.0135

-.0094

.0035

-.0066

240.000

-.0137

-.0171

-.0071

247.500

.0277

-.0184

.0408

270.000

.0022

.2001

-.0094

-.0211

315.000

-.0117

MACH (2) = 4.600 ALPHA (3) = .000 PINF = .16570 Q(PSI) = 2.4551 RN/L = 3.0050 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB .0000 .0040 .0250 .0500 .0750 .1000 .1100 .1150 .1300 .1500 .2000 .3000 .4000 .5000 .6000

PSI

90.000 1.3783

.1078

.1062

.1059

-.0030

180.000

.1388

.1078

-.0033

-.0045

-.0147

225.000

-.0133

.0221

247.500

-.0157

-.0102

.0122

.0238

260.000

.3392

.2133

.1209

.1248

.1683

.2810

.3342

.0038

.0240

-.0031

-.0191

-.0160

-.0089

-.0079

270.000

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UPWT 1059 (IH4) 01-122-S8N16 SOLID RCKT. BSTR.

(RQ3SBB)

MACH (2) = 4.600 ALPHA (3) = .000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRE	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

PSI
315.000

-.0215

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

PSI

90.000	.0008	.0090	-.0073	.0486	.0417
--------	-------	-------	--------	-------	-------

180.000	.0153	.0982	-.0073	.0080	.0482	.0703	.0563
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210.000	.0041	.1165	.0423	.0078
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215.000		.0044	-.0199	-.0251
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225.000	.1112	.0133	-.0129	-.0070	-.0150
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240.000		-.0177	-.0211	-.0117
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[illegible]

270.000	- .0021	.1596	-.0137	-.0217		-.0192		.0404
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315.000 -.0031

MACH (2) = 4.600 ALPHA (4) = 5.000 PINF = .16570 Q(PSI) = 2.4551 RN/L = 3.0050 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

PSI

90.000	1.3522	.1024	.1005	.1017	- .0125
--------	--------	-------	-------	-------	---------

180.000			.0834	.0680	-.0215	-.0092
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225.000		- .0090	- .0143	.0146
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247.500	- .0174 - .0146 - .0119 .0109
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[illegible]

270.000	.3409	.2151	.1210	.1074	.1863	.2923	.0064	.0068	-.0018	-.0167	-.0157	-.0123	.0037
---------	-------	-------	-------	-------	-------	-------	-------	-------	--------	--------	--------	--------	-------

315.000	-	.0003
---------	---	-------

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
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PSI

90.000	-.0081	.0731	-.0074	.0453	.0493
--------	--------	-------	--------	-------	-------

180.000	.0000	.0332	-.0106	.0267	.0901	.0738	.0459
---------	-------	-------	--------	-------	-------	-------	-------

210.000					.0119	.2107		.0633		.0211
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215.000	.0199	-.0156	-.0239
---------	-------	--------	--------

225.000	.1169	-.0090	-.0100	.0106	-.0042
---------	-------	--------	--------	-------	--------

240.000	- .0137	- .0109	- .0018
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247.500 .0180

270.000	.0177	.2064	-.0102	-.0213		-.0201		.0411
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315.000 .0071

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TABULATED SOURCE DATA - 144

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UPWT 1059 (144) 01 A-ONE

ORBITER FUSELAGE

(ROSECA) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 1.200 BETA = .000

MACH (1) = 2.360 ALPHA (1) = .000 PINF = .48157 Q(PSI) = 1.8775 RN/L = 1.2100 CPSTG = 1.7063

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9962	.5350	.2042	.1182		.0747	.0494	.0328		.0126					
10.000								.0307							
20.000								.0323							
24.500								.0333							
39.000								.0788							
163.000														.3993	
174.000												.6664			
180.000	.9962				.2593			.2067	.2053	.2390	.6258		.6433		.5645
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0064	.0095	.0247	.0204	.0202		.0122				-.0248		-.0312	-.0354	
23.000		.0075													
24.000	.0116														
31.500	.0157														
33.100		.0054													
35.000	.0162														
40.000	.0183	.0007													
45.000		-.0029													
50.000	.0431														
51.600														.0230	
57.000		-.0047													
60.900		-.0052													
65.000		-.0113													
68.000														-.0119	
69.000		-.0156													
79.300						-.0118									
95.500						-.0060									
95.700		-.0267					.0008								
96.300	.0496														
103.000						-.0041									
105.000															-.0685
112.600						-.0020									
117.500															
120.800									.1137						
127.900							.1999								
129.500									.2185						

UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ39CA)

MACH (1) = 2.360 ALPHA (1) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
130.000									.1642	.0396		.0202			
135.000		-.0670													
139.600									.1723						
144.000												.0532			
155.000	.1483														
180.000	.0612	-.0170													
X/LB	1.0250	1.0500													
PHI															
.000	-.0343	-.0372													

MACH (1) = 2.360 ALPHA (2) = 5.000 PINF = .48157 Q(PSI) = 1.8775 RN/L = 1.2100 CPSTG = 1.7063

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	1.0028	.6278	.2773	.1787		.1273	.0957	.0740		.0472					
10.000								.0719							
20.000								.0735							
24.500								.0740							
39.000								.0879							
163.000														.3366	
174.000															
180.000	1.0028				.1948			.1476	.1487	.1762	.4880	.5704	.5338		.4717
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0343	.0322	.0397	.0368	.0339		.0398				.0030		-.0033	-.0095	
23.000		.0317													
24.000	.0410														
31.500	.0467														
33.100		.0338													
35.000	.0487														
40.000	.0534	.0348													
45.000		.0384													
50.000	.0590														
51.600															
57.000		-.0099													
60.900		-.0114													
65.000		-.0110													
68.000															

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UPWT 1059 (IH4) OI ALONE

ORBITER FUSELAGE

(RQ3BCA)

MACH (1) = 2.360 ALPHA (2) = 5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8250	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
69.000		-.0124													
79.300					-.0337										
95.500					-.0312		-.0238								
95.700		-.0280													
96.300	.0571														
103.000					-.0320										
105.000															-.0770
112.600					-.0326										
117.500															
120.800									.0891			-.0280		-.0303	
127.900						.1042									
129.500								.1487							
130.000									.1282	.0244		.0025			
135.000		-.0847			-.0223										
139.600									.1195						
144.000												.0245			
155.000	.1199														
180.000	.0254	-.0555			-.0212										
X/LB	1.0250	1.0500													
PHI															
.000	-.0046	-.0122													

MACH (1) = 2.360 ALPHA (3) = 10.000 PINF = .48157 Q(PSI) = 1.8775 RN/L = 1.2100 CPSTG = 1.7063

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9934	.7164	.3591	.2482		.1901	.1469	.1283		.0912					
10.000								.1226							
20.000								.1226							
24.500								.1180							
39.000								.0885							
163.000														.2751	
174.600												.4437			
180.000	.9934				.1315			.0909	.1051	.1200	.3344		.4270		.3815
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0710	.0649	.0729	.0707	.0686		.0807				.0394		.0331	.0263	
23.000		.0638													

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCA)

MACH (1) = 2.360 ALPHA (3) = 10.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

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TABULATED SOURCE DATA - 1H4

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UPWT 1059 (1H4) O1 ALOVE ORBITER FUSELAGE (RQ3BCA)

MACH (1) = 2.360 ALPHA (4) = 20.000 PINF = .43157 Q(PSI) = 1.8775 RN/L = 1.2100 CPSTG = 1.7063

SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9344	.8721	.5435	.4093		.3379	.3875	.2571		.2098					
10.000								.2517							
20.000								.2436							
24.500								.2213							
39.000								.0830							
163.000														.0732	
174.000												.1508			
180.000	.9344				.0443			.0365	.0472	.0549	.0826		.2358		.2374
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.9000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.1780	.1601	.1541	.1777	.1781		.1906				.1397		.1311	.1175	
23.000		.1549													
24.000	.1726														
31.500	.1601														
33.100		.1518													
35.000	.1507														
40.000	.1161	.1394													
45.000		.1332													
50.000	.0509														
51.600															
57.000		-.0592													
50.900		-.0393													
65.000		-.0340													
68.000															
69.000		-.0315													
79.300						-.1005									
95.500						-.0529	-.107								
95.700		-.0330													
96.300	.0242														
103.000						-.0554									
105.000															
112.600						-.0635									
117.500															
120.800															
127.900						-.0046									
129.500															
130.000								.0284							
135.000		-.1010				-.0883			.0099	-.0617		-.0726			
139.600									.0000						
144.000															
155.000	.0160														
180.000	-.0424	-.0795				-.0563						-.0762			

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ39CA)

MACH (1) = 2.360 ALPHA (4) = 20.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0500

PHI

.000 .1357 .1221

MACH (2) = 2.950 ALPHA (1) = .000 PINF = .26532 Q(PS1) = 1.6163 RN/L = 1.2100 CPST6 = 1.7529

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 .1250 .1500 .1600 .1650 .1700 .1750 .1800

PHI

.000	1.0086	.5261	.1984	.1117		.0705	.0532	.0306		.0114				
10.000								.0282						
20.000								.0294						
24.500								.0323						
39.000								.0729						
163.000													.3898	
174.000														
180.000	1.0086				.2472		.1916	.1883	.2206	.5633	.6556	.6386		.5945

X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI

.000	.0039	.0027	.0017	.0027	-.0013		.0094				-.0177		-.0226	-.0245
23.000		.0015												
24.000	.0091													
31.500	.0126													
33.100		.0015												
35.000	.0126													
40.000	.0149	-.0008												
45.000		-.0019												
50.000	.0369													
51.600														
57.000		.0015										.0194		
60.900		.0003												
65.000		.0001												
68.000													-.0075	
69.000		-.0070												
79.300					-.0075									
95.500					-.0047		-.0051							
95.700		-.0139												
96.300	.0522													
103.000					-.0044									
105.000														-.0592
112.600					-.0054									
117.500											.0045		.0034	
120.800								.0992						

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCA)

MACH (2) = 2.950 ALPHA (1) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
127.900						.1248									
129.500								.1506							
130.000									.1323	.0409		.0097			
135.000		-.0389				-.0101									
139.600									.1506						
144.000												.0201			
155.000	.1583														
180.000	.0978	-.0158				-.0147									

X/LB 1.0250 1.0500

PHI

.000 -.0260 -.0279

MACH (2) = 2.950 ALPHA (2) = 5.000 PINF = .26532 Q(PSI) = 1.6163 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	1.0071	.6175	.2658	.1648		.1161	.1034	.0841		.0558					
10.000								.0809							
20.000								.0822							
24.500								.0835							
39.000								.0976							
163.000														.3062	
174.000												.4916			
180.000	1.0071				.1770			.1275	.1308	.1529	.3986	.4916	.4985		.4658

X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI

.000	.0409	.0364	.0271	.0287	.0256	.0345				.0041		-.0012	-.0044		
23.000		.0364													
24.000	.0474														
31.500	.0525														
33.100		.0403													
35.000	.0545														
40.000	.0596	.0416													
45.000		.0461													
50.000	.0635														
51.600															
57.000		-.0011													
60.900		-.0011													

-.0331

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 206

UPWT 1059 (IH4) 01 ALJNE

ORBITER FUSELAGE

(RQ38CA)

MACH (2) = 2.950 ALPHA (2) = 5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
65.000		-.0006													
68.000													-.0151		
69.000		-.0082													
79.300					-.0205										
95.500					-.0208		- 0178								
95.700		-.0156													
96.300	.0580														
103.000					-.0235										
105.000															
112.600					-.0279										-.0592
117.500															
120.800															
127.900						.0594				.0882					
129.500								.1072							
130.000															
135.000		-.0515			-.0249				.1010	.0250		.0019			
139.600									.0859						
144.000															
155.000	.1179											.0137			
180.000	.0584	-.0295			-.0288										

X/LB 1.0250 1.0500

PHI

.000 -.0039 -.0090

MACH (2) = 2.950 ALPHA (3) = 10.000 PINF = .26532 Q(PSI) = 1.6163 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9980	.7092	.3450	.2316		.1741	.1389	.1160		.0837					
10.000								.1125							
20.000								.1131							
24.500								.1102							
39.000								.0825							
163.000														.2063	
174.000												.3147			
180.000	.9980				.1193			.0780	.0901	.1029	.2365		.3749		.3551

TABULATED SOURCE DATA - 1H4

ORBITER FUSELAGE

(RQ39CA)

MACH (2) = 2.950 ALPHA (3) = 10.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

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TABULATED SOURCE DATA - IH4

PAGE 208

		UPWT 1059 (1H4) 01 ABOVE		ORBITER FUSELAGE		(RQ3BCA)	
MACH (2) =	2.950	ALPHA (4) =	20.000	PINF =	.26532	Q(PS1) =	1.6163
						RN/L =	1.2100
						CPSTG =	1.7529

SECTION 1 ORBITER FUSELAGE		DEPENDENT VARIABLE CP/CPS													
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9334	.8708	.5294	.3958		.3253	.2778	.2444		.2057					
10.000								.2450							
20.000								.2379							
24.500								.2180							
39.000								.0824							
163.000														.0400	
174.000												.0769			
180.000	.9334				.0416			.0271	.0353	.0476	.0510		.1348		.1679
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.1769	.1587	.1632	.1661	.1683		.1834				.1281		.1190	.1081	
23.000		.1528													
24.000	.1704														
31.500	.1587														
33.100		.1487													
35.000	.1493														
40.000	.1147	.1388													
45.000		.1317													
50.000	.0478														
51.600														.0719	
57.000		-.0406													
60.900		-.0220													
65.000		-.0224													
68.000														.0726	
69.000		-.0239													
79.300					-.0623										
95.500					-.0351		-.0705								
95.700		-.0246													
96.300	.0235														
103.000					-.0322										
105.000															.0611
112.600					-.0404										
117.500															
120.800									.0429						
127.900					-.0326										
129.500								.0367							
130.000			</												

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TABULATED SOURCE DATA - IH4

PAGE 209

UPWT 1059 (1H4) Q1 ALOPE

ORBITER FUSELAGE

(RQ3BCA)

MACH (2) = 2.950 ALPHA (4) = 20.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0500

PHI

.000 .1195 .1091

MACH (3) = 3.700 ALPHA (1) = -5.000 PINF = .13154 Q(PSI) = 1.2605 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 .1250 .1500 .1600 .1650 .1700 .1750 .1800

PHI

.000 .9769 .4184 .1351 .0640 .0346 .0974 .0119 -.0032

10.000

20.000

24.500

39.000

163.000

174.000

180.000

X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI

.000 -.0078 -.0101 -.0105 .0072 .0067 -.0030 -.0250 -.0277 -.0269

23.000

24.000

31.500

33.100

35.000

40.000

45.000

50.000

51.600

57.000

60.900

65.000

68.000

69.000

79.300

95.500

95.700

96.300

103.000

105.000

112.600

117.500

120.800

.0093

.0048

.0138

.0101

.0123

.0199

.0229

.0232

.0048

.0048

.0048

.0048

.0048

.0035

.0035

.0064

.0038

.0498

.0035

.0028

.0032

.0003

.0013

.0374

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) OI ALONE

ORBITER FUSELAGE

(RQ3BCA)

MACH (3) = 3.700 ALPHA (2) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
65.000		.0003													
68.000													-.0051		
69.000		-.0003													
79.300					-.0069										
95.500					-.0084		-.0084								
95.700		-.0114													
96.300	.0441														
103.000					-.0123										
105.000															
112.600					-.0141										-.0369
117.500												.0051		.0066	
120.800									.0634						
127.900						.0357									
129.500								.0588							
130.000									.0878	.0382		.0000			
135.000		-.0135			-.0123										
139.600									.1026						
144.000												.0081			
155.000	.1509														
180.000	.1177	-.0012			-.0009										
X/LB	1.0250	1.0500													
PHI															
.000	-.0225	-.0236													

MACH (3) = 3.700 ALPHA (3) = 5.000 PINF = .13154 Q(PSI) = 1.2605 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9917	.6000	.2516	.1513		.1047	.0850	.0585		.0342					
10.000								.0548							
20.000								.0570							
24.500								.0585							
39.000								.0681							
163.000														.2551	
174.000												.4099			
180.000	.9917				.1648			.1140	.1169	.1385	.3198		.4787		.4718

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCA)

MACH (3) = 3.700 ALPHA (3) = 5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CP5

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ38CA)

MACH (3) = 3.700 ALPHA (4) = 10.000 PINF = .13154 Q(PST) = 1.2605 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9890	.6923	.3275	.2134		.1582	.1249	.1028		.0734					
10.000								.0991							
20.000								.1006							
24.500								.0984							
39.000								.0741							
163.000														.1517	
174.000															
180.000	.9890				.1141			.0704	.0799	.0917	.1704	.2365	.3315		.3412
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.3000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0557	.0439	.0459	.0487	.0461		.3563				.0202		.0145	.0134	
23.000		.0446													
24.000	.0572														
31.500	.0586														
33.100		.0468													
35.000	.0586														
40.000	.0572	.0491													
45.000		.0520													
50.000	.0454														
51.600															
57.000		-.0080												-.0365	
60.900		-.0099													
65.000		-.0105													
68.000															
69.000		-.0114												-.0368	
79.300					-.0241										
95.500					-.0235		-.0269								
95.700		-.0136													
96.300	.0406														
103.000					-.0251										
105.000															-.0430
112.600					-.0282										
117.500															
120.800									.0629				-.0189	-.0217	
127.900						-.0052									
129.500								.0026							
130.000									.0394	-.0044			-.0213		
135.000		-.0359			-.0288										
139.600									-.0094						
144.000													-.0133		
155.000	.0560														
180.000	.0426	-.0095			-.0092										

ORIGINAL PAGE IS
OF POOR QUALITY

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

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UPWT 1059 (1H4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCA)

MACH (3) = 3.700 ALPHA (4) = 10.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	1.0250	1.0500
------	--------	--------

PHI			
.000	.0099	.0029	

MACH (3) = 3.700 ALPHA (5) = 20.000 PINF = .13154 Q(PSI) = 1.2605 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CP5

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

[illegible]

.0286

	.9363		.0482		.0234	.0304	.0461	.0377	.0504		.0842		.1151
--	-------	--	-------	--	-------	-------	-------	-------	-------	--	-------	--	-------

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--------	--------

PHI										
.000	.1571	.1389	.1469	.1542	.1531	.1685		.1089	.0994	.0903

23.000	.1571	.1346	.1552	.1512	.1531	.1523	.1523	.1523	.1523
24.000	.1505								
31.500	.1404								
33.100		.1302							
35.000	.1331								
40.000	.1041	.1244							
45.000		.1186							
50.000	.0424								

- .0390

57.000	-.0212
60.900	-.0107
65.000	-.0101

- .0393

69,000	- .0149
--------	---------

79.300

95.500

95.700 - .0173

96.300	.0281
107.000	

103.000
105.000105.000
112.600

117.500

120.800

- .0360

- .0203

- .0378

- .0203

~.0257

.0424

-.0284

-0302

- .0423

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(RQ3BCA)

DEPENDENT VARIABLE CP/CPS

PHI

.0086
-.0035

-.0375

-.0128

- .0201
- .0354
- .0319

.0296

.0068 - .0217
- .0209

- .0291

- .0293

PHI

.000	.0954	.0854
------	-------	-------

DEPENDENT VARIABLE CP/CPS

PHI

10.000
20.000
24.500
39.000
163.000
174.000
180.000

.9810

.4188

.0375

.2930

.0165
.0085
.0115
.0135
.0585

.0055

.7744

.8427

.4600

.8295

PHI.

23.000
24.000
31.500
33.100
35.000
40.000
45.000
50.000
51.600
57.000
60.900

.0005
- .0005
.0055
.0005
- .0015
.0225

-.0015
 -.0045
 -.0035
 -.0075
 -.0105
 .0079
 .0091

.0035

.0101

-0162

-.0190 -.0173

-.0105

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(PQ3BCA)

MACH (4) = 4.600 ALPHA (1) = -5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CP5

X/LB	.2000	.3000	.4000	.5000	.6000	.7000	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
65.000		.0091													
68.000													-.0002		
69.000		.0091													
79.300					-.0005										
95.500					-.0029		-.0117								
95.700			.0087												
96.300	.0525														
103.000					-.0052										
105.000															-.0251
112.600					-.0090										
117.500												-.0029		-.0044	
120.800									.0596						
127.900						.0769									
129.500								.2196							
130.000									.1530	.0439		-.0040			
135.000		-.0048			-.0109										
139.600									.1640						
144.000												-.0009			
155.000	.2033														
180.000	.1842	.0134			-.0001										

X/LB 1.0250 1.0500

PHI

.000 -.0200 -.0207

MACH (4) = 4.600 ALPHA (2) = .000 PINF = .66E40-01 Q(P51) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CP5

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0600	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9925	.5079	.1892	.1021		.0625	.0446	.0261		.0114					
10.000								.0197							
20.000								.0225							
24.500								.0252							
39.000								.0565							
163.000														.3382	
174.000											.5502				
180.000	.9925				.2195			.1596	.1580	.1692	.4370	.6531			.6582

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(RQ38CA)

DEPENDENT VARIABLE C²/CPS[illegible]

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3ECA)

MACH (4) = 4.600 ALPHA (3) = 5.000 PINF = .6621-0-01 Q(PSI) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ35CA)

MACH (4) = 4.600 ALPHA (3) = 5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0500

PHI

.000 -.0124 -.0151

MACH (4) = 4.600 ALPHA (4) = 10.000 PINF = .66240-01 Q(PS1) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 .1250 .1500 .1600 .1650 .1700 .1750 .1800

PHI

.000 .9877 .6926 .3248 .2100 .1546 .1222 .0986 .0674

10.000

20.000

24.500

39.000

163.000

174.000

180.000

X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI

.000 .0485 .0363 .0333 .0591 .0584 .0590 .0225 .0160 .0198

23.000

24.000

31.500

33.100

35.000

40.000

45.000

50.000

51.600

57.000

60.900

65.000

68.000

69.000

79.300

95.500

95.700

96.300

103.000

105.000

112.600

117.500

120.800

.0440

-.0153

-.0161

-.1181

-.0173

-.0184

.0421

-.0111

-.0119

-.0285

-.0212

-.0219

.1149

.1697

.2226

.3067

.1091

.0627

.0680

.0836

.1225

.1697

.3067

PAGE 220

(RQ3BCA)

SECTION: (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

PHI

127.900

129.500

130,000

135,000

139,600

144.000

155.000

100.000

X/LB	1.0250	1.0500
------	--------	--------

PHI

.000

MACH (4) = 4.600 ALPHA (5) = 20.000 PINF = .66240-01 Q(PS1) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

FBI

000

10.000

20,000.

24.500

39.000

163.000

174.000

180.000

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8100	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--------	--------

PHI

1000

23.000

24.000

31.500

33.100

35,000

40.000

45.000
50.00050.000
51.60051.600
57.000

57.000
60.900

100, 350

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 221

UPWT 1059 (IH4) 01 ALONG

ORBITER FUSELAGE

(RQ3BCA)

MACH (4) = 4.600 ALPHA (5) = 20.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE (P/CPS)

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
55.000		-.0033													
68.000													-.0166		
69.000		-.0030													
79.300					-.0033										
95.500					-.0060		-.0158								
95.700		-.0030													
96.300	.0418														
103.000					-.0067										
105.000															-.0211
112.600					-.0105										
117.500															
120.800															
127.900						-.0053									
129.500								.0194							
130.000									.0421						
135.000		-.0033													
139.600					-.0162										
144.000									.0099	-.0058					
155.000	.0158														
180.000	.0097	.0018													
X/LB	1.0250	1.0500													
PHI															
.000	.0923	.0825													

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DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 222

UPWT 1059 (IH4) 01 ALONE

ORB. UPPER WING

(RQ3UCA) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 1.200 BETA = .000

MACH (1) = 2.360 ALPHA (1) = .000 PINF = .48157 Q(PSI) = 1.8775 RN/L = 1.2100 CPSTG = 1.7063

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050 .1084
 .200 -.0121 -.0112 .0525
 .600 -.0727 -.0694
 .800 -.0700
 .900 .1398 -.0524
 .950 -.0597

MACH (1) = 2.360 ALPHA (2) = 5.000 PINF = .48157 Q(PSI) = 1.8775 RN/L = 1.2100 CPSTG = 1.7063

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050 .0561
 .200 -.0547 -.0593 -.0013
 .600 -.0929 -.0918
 .800 -.0924
 .900 .1327 -.0797
 .950 -.0769

MACH (1) = 2.360 ALPHA (3) = 10.000 PINF = .48157 Q(PSI) = 1.8775 RN/L = 1.2100 CPSTG = 1.7063

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050 -.0318
 .200 -.0836 -.0892 -.0426
 .600 -.1070 -.1039
 .800 -.1044
 .900 .1296 -.0894
 .950 -.0868

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 223

UPWT 1059 (1H4) 01 ALONE

ORB. UPPER WING

(RQ3UCA)

MACH (1) = 2.360 ALPHA (4) = 20.000 PINF = .48157 Q(PSI) = 1.8775 RN/L = 1.2100 CPSTG = 1.7063

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	-.0859		
.200	-.1092	-.1226	-.0918
.600	-.1228	-.1222	
.800		-.1222	
.900		.1448	-.0916
.950		-.0927	

MACH (2) = 2.950 ALPHA (1) = .000 PINF = .26532 Q(PSI) = 1.6163 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1088		
.200	-.0150	.0063	.0694
.600	-.0527	-.0498	
.800		-.0504	
.900		.0567	-.0356
.950		-.0367	

MACH (2) = 2.950 ALPHA (2) = 5.000 PINF = .26532 Q(PSI) = 1.6163 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0570		
.200	-.0367	-.0185	.0317
.600	-.0589	-.0564	
.800		-.0555	
.900		.0646	-.0382
.950		-.0428	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 224

UPWT 1059 (IH4) OI ALONE

ORB. UPPER WING

(RQ3UCA)

MACH (2) = 2.950 ALPHA (3) = 10.000 PINF = .26532 Q(PSI) = 1.6163 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	-.0148		
.200	-.0578	-.0485	-.0017
.600	-.0667	-.0647	
.800		-.0634	
.900		.0610	-.0508
.950		-.0489	

MACH (2) = 2.950 ALPHA (4) = 20.000 PINF = .26532 Q(PSI) = 1.6163 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	-.0534		
.200	-.0708	-.0690	-.0362
.600	-.0744	-.0723	
.800		-.0696	
.900		.0647	-.0524
.950		-.0541	

MACH (3) = 3.700 ALPHA (1) = -5.000 PINF = .13154 Q(PSI) = 1.2605 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1307		
.200	.0191	.0470	.1270
.600	-.0291	-.0262	
.800		-.0249	
.900		.0344	.0034
.950		-.0108	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 225

UPWT 1059 (IH4) OI ALONE

ORB. UPPER WING

(RQ3UCA)

MACH (3) = 3.700 ALPHA (2) = .000 PINF = .13154 Q(PSI) = 1.2605 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0872		
.200	-.0028	.0206	.0813
.600	-.0346	-.0322	
.800		-.0280	
.900		.0353	-.0067
.950		-.0138	

MACH (3) = 3.700 ALPHA (3) = 5.000 PINF = .13154 Q(PSI) = 1.2605 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0551		
.200	-.0252	-.0070	.0469
.600	-.0397	-.0366	
.800		-.0334	
.900		.0361	-.0139
.950		-.0181	

MACH (3) = 3.700 ALPHA (4) = 10.000 PINF = .13154 Q(PSI) = 1.2605 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0021		
.200	-.0281	-.0147	.0333
.600	-.0350	-.0304	
.800		-.0278	
.900		.0457	-.0077
.950		-.0118	

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DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 226

UPWT 1059 (IH4) 01 ALONE

ORB. UPPER WING

(RQ3UCA)

MACH (3) = 3.700 ALPHA (5) = 20.000 PINF = .13154 Q(PSI) = 1.2605 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	-.0283		
.200	-.0402	-.0337	-.0023
.600	-.0413	-.0400	
.800		-.0368	
.900		.0395	-.0159
.950		-.0170	

MACH (4) = 4.600 ALPHA (1) = -5.000 PINF = .66240-01 Q(PSI) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1119		
.200	.0171	.0521	.1456
.600	-.0236	-.0159	
.800		-.0162	
.900		.0285	.0349
.950		.0040	

MACH (4) = 4.600 ALPHA (2) = .000 PINF = .66240-01 Q(PSI) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0873		
.200	.0004	.0245	.0905
.600	-.0244	-.0180	
.800		-.0150	
.900		.0319	.0185
.950		.0058	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 227

UPWT 1059 (IH4) 01 ALONE

ORB. UPPER WING

(RQ3UCA)

MACH (4) = 4.600 ALPHA (3) = 5.000 PINF = .66240-01 Q(PSI) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE (P/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0548		
.200	-.0126	.0071	.0570
.600	-.0267	-.0207	
.800		-.0163	
.900		.0319	.0212
.950		.0044	

MACH (4) = 4.600 ALPHA (4) = 10.000 PINF = .66240-01 Q(PSI) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE (P/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0166		
.200	-.0139	.0023	.0414
.600	-.0153	-.0153	
.800		-.0116	
.900		.0397	.0192
.950		.0096	

MACH (4) = 4.600 ALPHA (5) = 20.000 PINF = .66240-01 Q(PSI) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE (P/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	-.0040		
.200	-.0205	-.0121	.0153
.600	-.0270	-.0195	
.800		-.0154	
.900		.0370	.0160
.950		.0062	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 228

UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCA) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 1.200 BETA = .000

PARAMETRIC DATA

MACH (1) = 2.360 ALPHA (1) = .000 PINF = .48157 Q(PSI) = 1.8775 RN/L = 1.2100 CPSTG = 1.7063

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE C_p/CPS

2Y/BW .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 .9500 .9980

X/CW

.000						.3203		.3528		-.0453
.001		.0054	.0075		.2122	.0462	.3138	.0580		
.002						.0075		.0441		
.003						.4316		.3928		
.004						.1033		.0897		
.005						.0209		.0439		
.025				.0406	.0271		.0431			
.045				.0431						
.100						.0107		.0400	.0468	
.153	.0033									
.177					.0218					
.200				.0226						
.299	.0239									
.302				.0222		.0243				
.428						.0222				
.444	.0235									
.487					.0216					
.559				.0208						
.600						.0220				
.700						-.0118				
.736	.0204									
.800						-.0319				
.850						-.0335				
.900				-.0515		-.0548	-.0557		-.0536	

MACH (1) = 2.360 ALPHA (2) = 5.000 PINF = .48157 Q(PSI) = 1.8775 RN/L = 1.2100 CPSTG = 1.7063

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE C_p/CPS

2Y/BW .2500 .3011 .3480 .4000 .5000 .6000 .7500 .8500 .9500 .9980

X/CW

.000						.4051		.3710		-.0890
.001		.0281	.0240		.3187	.1400	.3849	.1342		
.002						.0951		.1237		
.003						.4121		.3311		
.004						.2091		.1884		
.005						.1153		.1228		

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 229

UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCA)

MACH (1) = 2.360 ALPHA (2) = 5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE C₁/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.025				.1189	.1333		.1251			
.045				.1220						
.100						.0918		.1328	.1318	
.153	.0384									
.177					.0775					
.200				.0547						
.299	.0341									
.302				.0618			.1174			
.428						.0926				
.444	.0410									
.487					.0875					
.559				.0741						
.600						.0743				
.700						.0409				
.736	.0529									
.800						.0137				
.850						-.0044				
.900				-.0188		-.0184	-.0110		-.0133	

MACH (1) = 2.360 ALPHA (3) = 10.000 PINF = .48157 Q(PS1) = 1.8775 RN/L = 1.2100 CPSTG = 1.7053

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE C_F/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.4620		.3676		-.1044
.001		.0220	-.0074		.3702	.2546	.4364	.2569		
.002						.1831		.2369		
.003						.3522		.2429		
.004						.3175		.3124		
.005						.2171		.2429		
.025				.1448	.2212		.2471			
.045				.1531						
.100						.1906		.2498	.2076	
.153	.0721									
.177					.1530					
.200				.1077						
.299	.0682									
.302				.1151			.2089			
.428						.1661				
.444	.0757									
.487					.1568					
.559				.1304						
.600						.1402				

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 230

UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCA)

MACH (1) = 2.360 ALPHA (3) = 10.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CF/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.700						.1001				
.736	.0991									
.800						.0657				
.850						.0428				
.900				.0219		.0247	.0372		.0272	

MACH (1) = 2.360 ALPHA (4) = 20.000 PINF = .48157 Q(PSI) = 1.8775 RN/L = 1.2100 CPSTG = 1.7063

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.4865		.2990		-.1079
.001		.0411	-.0034		.3693	.4261	.4801	.4742		
.002						.3626		.4347		
.003						.2351		.1033		
.004						.4737		.5086		
.005						.3923		.4455		
.025				.1963	.3369		.4586			
.045				.2300						
.100						.3551		.4552	.2970	
.153	.1528									
.177					.2911					
.200				.2211						
.299	.1685									
.302				.2286			.3807			
.428						.3125				
.444	.1836									
.487					.3077					
.559				.2656						
.600						.3021				
.700						.2283				
.736	.2188									
.800						.1798				
.850						.1495				
.900				.1208		.1220	.1439		.1213	

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 231

UPWT 1059 (1H4) 01 ALONE				ORB. LOWER WING		(RQ3LCA)	
MACH (2) =	2.950	ALPHA (1) =	.000	PINF =	.26532	Q(P51) =	1.6163
						RN/L =	1.2100
						CPSTG =	1.7529

SECTION (1) ORB. LOWER WING	DEPENDENT VARIABLE CP/CPS
-------------------------------	---------------------------

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CH

.000				.3364		.3815		- .0153
.001	.0027	.0062	.2232	.0654	.3352	.0645		
.002				.0259		.0454		
.003				.4556		.4297		
.004				.1265		.1118		
.005				.0410		.0475		
.026			.0329	.0410	.0613			
.045			.0340					
.100				.0244		.0538	.0636	
.153	.0010							
.177								
.200				- .0021				
.299	- .0038		- .0088					
.302			- .0025		.0350			
.428				.0113				
.444	- .0004							
.487				.0115				
.559			.0092					
.600				.0033				
.700				- .0104				
.736	.0042							
.800				- .0249				
.850				- .0326				
.900			- .0369	- .0392	- .0377		- .0259	

MACH (2) = 2.950 ALPHA (2) = 5.000 PINF = .26532 Q(P51) = 1.6163 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORB. LOWER WING DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000				.4103		.3983		
.001	.0377	.0345		.1730	.400	.1445		-.0402
.002				.1163		.1211		
.003				.4266		.3688		
.004				.2173		.2303		
.005				.1382		.1251		
.025			.1214	.1588				
.045			.1227		.1633			
.100								
.153	.0461			.0915		.1536	.1511	
.177								
.200				.0632				
.299	.0269		.0422					

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 232

UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCA)

MACH (2) = 2.950 ALPHA (2) = 5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.302				.0469			.1069			
.428						.0790				
.444	.0306									
.487					.0721					
.559				.0575						
.600						.0643				
.700						.0397				
.736	.0382									
.800						.0184				
.850						.0043				
.900				-.0090		-.0065	.0009		.0048	

MACH (2) = 2.950 ALPHA (3) = 10.000 PINF = .26532 Q(PSI) = 1.6163 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.4806		.4059		-.0543
.001		.0291	.0080		.3884	.2400	.4608	.2445		
.002						.1795		.2189		
.003						.3914		.2992		
.004						.3172		.3044		
.005						.2094		.2258		
.025				.1354	.2200		.2447			
.045				.1448						
.100						.1692		.2311	.2053	
.153	.0673									
.177					.1297					
.200				.0907						
.299	.0606									
.302				.0963			.1893			
.428						.1494				
.444	.0658									
.487					.1372					
.559				.1081						
.600						.1270				
.700						.0901				
.736	.0780									
.800						.0607				
.850						.0414				
.900				.0203		.0265	.0407		.0437	

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TABULATED SOURCE DATA - IH4

PAGE 233

UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(R03LCA)

MACH (2) = 2.950 ALPHA (4) = 20.000 PINF = .26532 Q(PSI) = 1.6163 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.5686		.3909		-.0532
.001		.0619	.0272		.4317	.4332	.5469	.4845		
.002						.3505		.4379		
.003						.3265		.1868		
.004						.5017		.5449		
.005						.3972		.4535		
.025				.2092	.3566		.4799			
.045				.2362						
.100						.3575		.4738	.3298	
.153	.1564									
.177					.2771					
.200				.2116						
.299	.1620									
.302				.2226			.3790			
.428						.3145				
.444	.1751									
.487					.2941					
.559				.2472						
.600						.2845				
.700						.2315				
.736	.2017									
.800						.1842				
.850						.1543				
.900				.1220		.1285	.1545		.1396	

MACH (3) = 3.700 ALPHA (1) = -5.000 PINF = .1354 Q(PSI) = 1.2605 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.2765		.3858		.0021
.001		-.0229	-.0275		.1633	.0293	.2367	.0388		
.002						.0028		.0162		
.003						.4647		.5042		
.004						.0896		.0762		
.005						.0134		.0222		
.025				-.0229	.0013		.0301			
.045				-.0244						
.100						-.0001		.0232	.0338	
.153	-.0176									
.177					-.0256					
.200				-.0277						
.299	-.0233									

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TABULATED SOURCE DATA - IH4

PAGE 234

UPWT 1059 (IH4) OI ALONE

ORB. LOWER WING

(H3LCA)

MACH (3) = 3.700 ALPHA (1) = -5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CP5

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.302				-.0255			.0020			
.428						-.0198				
.444	-.0244									
.487					-.0220					
.559				.0053						
.600						-.0233				
.700						-.0303				
.736	.0061									
.800						-.0319				
.850						-.0295				
.900				-.0314		-.0295	-.0319		-.0253	

MACH (3) = 3.700 ALPHA (2) = .000 PINF = .13154 Q(P51) = 1.2605 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CP5

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000						.3325		.4065		.0002
.001		-.0005	.0002		.2321	.0723	.3519	.0814		
.002						.0351		.0537		
.003						.4482		.4588		
.004						.1362		.1332		
.005						.0485		.0600		
.025				.0240	.0508		.0730			
.045				.0247						
.100						.0278		.0626	.0730	
.153	-.0020									
.177					-.0026					
.200				-.0113						
.299	-.0068									
.302				-.0141			.0239			
.428						-.0042				
.444	-.0068									
.487					-.0050					
.559				-.0047						
.600						-.0042				
.700						-.0123				
.736	-.0039									
.800						-.0204				
.850						-.0241				
.900				-.0274		-.0274	-.0249		-.0159	

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TABULATED SOURCE DATA - IH4

PAGE 236

UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCA)

MACH (3) = 3.700 ALPHA (4) = 10.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.302				.0779			.1611			
.428						.1307				
.444	.0526									
.487					.1146					
.559				.0883						
.600						.1102				
.700						.0762				
.736	.0612									
.800						.0512				
.850						.0342				
.900				.0124		.0213	.0358		.0412	

MACH (3) = 3.700 ALPHA (5) = 20.000 PINF = .13154 Q(PSI) = 1.2605 RN/L = 1.2000 CP5TG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CF/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.6477		.3578		-0.0200
.001		.0656	.0402		.4995	.4394	.6267	.4146		
.002						.3363		.3775		
.003						.4116		.2115		
.004						.5323		.4656		
.005						.3920		.3911		
.025				.2042	.3552		.4869			
.045				.2275						
.100						.3437		.3968	.2812	
.153	.1447									
.177					.2603					
.200				.1980						
.299	.1526									
.302				.2071			.3477			
.428						.3082				
.444	.1627									
.487					.2740					
.559				.2242						
.600						.2740				
.700						.2169				
.736	.1845									
.800						.1718				
.850						.1413				
.900				.1043		.1170	.1275		.1297	

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TABULATED SOURCE DATA - 1H4

PAGE 237

UPWT 1059 (1H4) 01 ALONE

ORB. LOWER WING

(RQ3LCA)

MACH (4) = 4.600 ALPHA (1) = -5.000 PINF = .66240-01 Q(PS1) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CF/CPS

2Y/84	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.2739		.4553		.0145
.001		-.0075	-.0105		.1864	.0425	.3528	.0587		
.002						.0195		.0300		
.003						.4888		.5985		
.004						.1064		.1105		
.005						.0275		.0381		
.025				-.0065	.0195		.0515			
.045				-.0095						
.100						.0151		.0435	.0515	
.153	-.0045									
.177					-.0039					
.200				-.0032						
.299	-.0028									
.302				-.0035			.0101			
.428						-.0067				
.444	-.0021									
.487					-.0140					
.559				.0010						
.600						-.0119				
.700						-.0173				
.736	.0021									
.800						-.0193				
.850						-.0200				
.900				-.0193		-.0200	-.0183		-.0121	

MACH (4) = 4.600 ALPHA (2) = .000 PINF = .66243-01 Q(PSI) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

[illegible]

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TABULATED SOURCE DATA - IH4

PAGE 239

UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCA)

MACH (4) = 4.600 ALPHA (2) = .000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CH										
.302				.0027			.0343			
.428						.0110				
.444	.0031									
.487										
.559				-.0062	-.0066					
.600						.0034				
.700						-.0019				
.736	-.0059									
.800						-.0076				
.850						-.0110				
.900				-.0131		-.0124	-.0090		-.0004	

MACH (4) = 4.600 ALPHA (3) = 5.000 PINF = .66240-01 Q(PST) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CH										
.000						.4453		.4710		.0051
.001		.0183	.0164		.3289	.1467	.4720	.1486		
.002						.0938		.1176		
.003						.4799		.4453		
.004						.2257		.2166		
.005						.1146		.1260		
.025				.0768	.1306		.1599			
.045				.0778						
.100							.0814	.1193	.1127	
.153	.0230									
.177					.0082					
.200				.0092						
.299	.0106									
.302				.0089		.0825				
.428						.0579				
.444	.0096									
.487					.0419					
.559				.0276						
.600						.0436				
.700						.0203				
.736	.0109									
.800						.0031				
.850						-.0044				
.900				-.0130		-.0086	-.0027		.0066	

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TABULATED SOURCE DATA - IH4

PAGE 239

UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCA)

MACH (4) = 4.600 ALPHA (4) = 10.000 PINF = .6624(-01 Q(PS1) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.5537		.3911		.0022
.001		.0306	.0211		.4293	.2403	.5527	.2189		
.002						.1704		.1787		
.003						.4941		.3011		
.004						.3288		.2762		
.005						.2006		.1893		
.025				.1175	.2148		.2526			
.045				.1251						
.100						.1529		.1893	.1629	
.153	.0551									
.177					.1043					
.200				.0693						
.299	.0336									
.302				.0713			.1525			
.428						.1223				
.444	.0465									
.487					.1043					
.559				.0809						
.600						.1186				
.700						.0790				
.736	.0591									
.800						.0519				
.850						.0347				
.900				.0123		.0231	.0330		.0335	

MACH (4) = 4.600 ALPHA (5) = 20.000 PINF = .66240-01 Q(PS1) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.7390		.3622		.0041
.001		.0715	.0503		.5694	.4648	.4991	.4151		
.002						.3586		.3678		
.003						.4901		.1797		
.004						.5817		.4574		
.005						.4140		.3820		
.025				.2155	.3826		.3909			
.045				.2395						
.100						.3550		.3752	.2764	
.153	.1454									
.177					.2614					
.200				.1996						
.299	.1523									

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UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCA)

MACH (4) = 4.600 ALPHA (5) = 20.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.302				.1986			.3130			
.428						.3126				
.444	.1602									
.487					.2716					
.559				.2257						
.600						.2654				
.700						.2081				
.736	.1814									
.800						.1597				
.850						.1302				
.900				.1021		.1069	.1187		.1312	

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. VERT. TAIL

(RQ3VCA) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 1.200 BETA = .000

MACH (1) = 2.360 ALPHA (1) = .000 PINF = .48157 Q(PSt) = 1.8775 RN/L = 1.2100 CPSTG = 1.7063

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .4125 .3667 .2953 .3837
 .300 .1450 .1257 .1104
 .500 .1040
 .700 -.0410
 .900 -.0641 -.0548 -.0358

MACH (1) = 2.360 ALPHA (2) = 5.000 PINF = .48157 Q(PSt) = 1.8775 RN/L = 1.2100 CPSTG = 1.7063

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3561 .3172 .2443 .3039
 .300 .1060 .0950 .0867
 .500 .0721
 .700 -.0543
 .900 -.0715 -.0666 -.0490

MACH (1) = 2.360 ALPHA (3) = 10.000 PINF = .48157 Q(PSt) = 1.8775 RN/L = 1.2100 CPSTG = 1.7063

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3367 .2669 .1923 .2493
 .300 .0867 .0740 .0669
 .500 .0525
 .700 -.0596
 .900 -.0784 -.0715 -.0553

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE ORB. VERT. TAIL (RQ3VCA)
 MACH (1) = 2.360 ALPHA (4) = 20.000 PINF = .48157 Q(PSI) = 1.8775 RN/L = 1.2100 CPSTG = 1.7063

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .4338 .2415 .1224 .1805
 .300 .0597 .0504 .0342
 .500 .0299
 .700 -.0780
 .900 -.0985 -.0907 -.0722

MACH (2) = 2.950 ALPHA (1) = .000 PINF = .26532 Q(PSI) = 1.6163 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .4056 .3520 .2984 .3888
 .300 .0850 .0656 .0436
 .500 .0715
 .700 -.0072
 .900 -.0356 -.0187 -.0192

MACH (2) = 2.950 ALPHA (2) = 5.000 PINF = .26532 Q(PSI) = 1.6163 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3519 .3146 .2296 .3037
 .300 .0908 .0693 .0459
 .500 .0693
 .700 -.0189
 .900 -.0405 -.0310 -.0202

MACH (2) = 2.950 ALPHA (3) = 10.000 PINF = .26532 Q(PSI) = 1.6163 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3142 .2594 .1988 .2538
 .300 .0643 .0500 .0328
 .500 .0448
 .700 -.0359
 .900 -.0531 -.0454 -.0346

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. VERT. TAIL

(RQ3VCA)

MACH (2) = 2.950 ALPHA (4) = 20.000 PINF = .26532 Q(PSI) = 1.6163 RN/L = 1.2100 CPSTG = 1.7529

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3711	.2140	.1226	.1504
.300	.0076	.0349	.0239	
.500		.0176		
.700		-.0499		
.900	-.0622	-.0569	-.0426	

MACH (3) = 3.700 ALPHA (1) = -5.000 PINF = .13154 Q(PSI) = 1.2605 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3726	.4564	.3934	.5201
.300	.0541	.0485	.0453	
.500		.0461		
.700		-.0059		
.900	-.0054	-.0097	-.0142	

MACH (3) = 3.700 ALPHA (2) = .000 PINF = .13154 Q(PSI) = 1.2605 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3913	.3286	.2890	.3905
.300	.0400	.0317	.0245	
.500		.0301		
.700		-.0115		
.900	-.0174	-.0145	-.0198	

MACH (3) = 3.700 ALPHA (3) = 5.000 PINF = .13154 Q(PSI) = 1.2605 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3347	.2889	.2159	.2850
.300	.0450	.0250	.0161	
.500		.0261		
.700		-.0165		
.900	-.0248	-.0219	-.0237	

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE ORB. VERT. TAIL (RQ3VCA)
 MACH (3) = 3.700 ALPHA (4) = 10.000 PINF = .13154 Q(PST) = 1.2605 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .2910 .2444 .1947 .2460
 .300 .0213 .0180 .0153
 .500 .0170
 .700 -.0254
 .900 -.0342 -.0313 -.0267

MACH (3) = 3.700 ALPHA (5) = 20.000 PINF = .13154 Q(PST) = 1.2605 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .2792 .2045 .0987 .1306
 .300 -.0064 .0039 .0093
 .500 -.0088
 .700 -.0364
 .900 -.0412 -.0401 -.0315

MACH (4) = 4.600 ALPHA (1) = -5.000 PINF = .69240-01 Q(PST) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .2897 .4415 .4050 .5493
 .300 .0399 .0388 .0409
 .500 .0347
 .700 -.0036
 .900 -.0008 -.0053 -.0073

MACH (4) = 4.600 ALPHA (2) = .000 PINF = .66240-01 Q(PST) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3446 .2852 .2793 .3822
 .300 .0272 .0276 .0269
 .500 .0242
 .700 -.0046
 .900 -.0049 -.0070 -.0073

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. VERT. TAIL

(RQ3VCA)

MACH (4) = 4.600 ALPHA (3) = 5.000 PINF = .66240-01 Q(PST) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.2949	.2603	.1772	.2544
.300	.0189	.0134	.0100	
.500		.0103		
.700		-.0154		
.900	-.0178	-.0178	-.0178	

MACH (4) = 4.600 ALPHA (4) = 10.000 PINF = .66240-01 Q(PST) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.2219	.2100	.1704	.2169
.300	.0106	.0160	.0167	
.500		.0137		
.700		-.0104		
.900	-.0137	-.0131	-.0110	

MACH (4) = 4.600 ALPHA (5) = 20.000 PINF = .66240-01 Q(PST) = .98142 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.1490	.2125	.0558	.0716
.300	.0029	-.0009	.0069	
.500		-.0066		
.700		-.0164		
.900	-.0161	-.0175	-.0137	

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TABULATED SOURCE DATA - (H4)

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UPWT 1059 (H4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCB) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 BETA = .000

MACH (1) = 2.360 ALPHA (1) = .000 PINF = 1.1978 Q(P51) = 4.6698 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9947	.5293	.1913	.1088		.0683	.0401	.0256		.0063					
10.000								.0243							
20.000								.0256							
24.500								.0270							
39.000								.0728							
163.000														.3890	
174.000												.6581			
180.000	.9947				.2574			.2024	.1967	.2243	.6274		.6424		.5591
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0000	.0035	.0102	.0072	.0078		.0' 15				-.0241		-.0295	-.0327	
23.000		.0008													
24.000	.0060														
31.500	.0104														
33.100		-.0016													
35.000	.0104														
40.000	.0125	-.0055													
45.000		-.0108													
50.000	.0368														
51.600													.0127		
57.000		-.0047													
60.900		-.0126													
65.000		-.0169													
68.000													-.0202		
69.000		-.0234													
79.300					-.0148										
95.500					-.0089		-.0024								
95.700		-.0306													
96.300	.0366														
103.000					-.0074										
105.000															-.0571
112.600					-.0056										
117.500															
120.800									.1109			-.0078		-.0064	
127.900															
129.500					.2008										
									.2325						

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TABULATED SOURCE DATA - 1H4

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UPWT 1059 (1H4) 01 ALONE

ORBITER FUSELAGE

(RQ38CB)

MACH (1) = 2.360 ALPHA (1) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
130.000									.1641	.0342		.0270			
135.000		-.0721													
139.600									.1724						
144.000												.0513			
155.000	.1354														
180.000	.0497	-.0362													

X/LB 1.0250 1.0500

PHI

.000 -.0323 -.0340

MACH (1) = 2.360 ALPHA (2) = 5.000 PINF = 1.1978 Q(PSI) = 4.6698 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9963	.6198	.2623	.1658		.1174	.0829	.0644		.0389					
10.000								.0633							
20.000								.0647							
24.500								.0650							
39.000								.0797							
163.000														.3320	
174.000												.5690			
180.000	.9963				.1890			.1422	.1408	.1630	.5172		.5432		.4728

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0263	.0269	.0339	.0302	.0281		.0385				.0034		-.0015	-.0045	
23.000		.0250													
24.000	.0342														
31.500	.0397														
33.100		.0283													
35.000	.0421														
40.000	.0473	.0291													
45.000		.0337													
50.000	.0527														
51.600															
57.000		-.0124											-.0152		
60.900		-.0152													
65.000		-.0160													
68.000															-.0550

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(RQ36CB)

DEPENDENT VARIABLE CP/CPS

[illegible]

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UPWT 1059 (1H4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCB)

MACH (1) = 2.360

ALPHA (4) = 20.000 PINF = 1.1978

Q(PSI) = 4.6698

$$RN/L = 3.0000$$

CPSTG = 1.7063

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE: CP/CPS

[illegible]

DATE 20 APR 76

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(R03BCB)

MACH (1) = 2.360 ALPHA (4) = 20.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0500

PHI
.000 .1483 .1445

MACH (2) = 2.950 ALPHA (1) = .000 PINF = .66350 Q(PST) = 4.0417 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 .1250 .1500 .1600 .1650 .1700 .1750 .1800

PHI
.000 .9980 .5142 .1889 .1053 .0672 .0430 .0302 .0132
10.000 .0300
20.000 .0312
24.500 .0331
39.000 .0792163.000 .3819
174.000 .6629
180.000 .9980 .2412 .1895 .1847 .2111 .5910 .6473 .5954

X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI
.000 .0054 .0054 .0052 .0037 .0053 .0085 -.0147 -.0188 -.0217
23.000 .003524.000 .0108
31.500 .0144

33.100 .0030

35.000 .0153

40.000 .0179 .0012

45.000 -.0007

50.000 .0392

51.600

57.000 -.0047

60.900 -.0050

65.000 -.0079

68.000

69.000 -.0087

79.300 -.0087

95.500 -.0044 -.0056

95.700 -.0131

96.300 .0340

103.000 -.0034

105.000

112.600 -.0028

117.500

120.800

.0991

.0054

.0032

-.0535

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ38CB)

MACH (2) = 2.950 ALPHA (1) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI						.1425									
127.900								.1894							
129.500									.1483	.0367		.0129			
130.000															
135.000		-.0422			-.0087										
139.600									.1510						
144.000												.0368			
155.000	.1493														
180.000	.0888	-.0148			-.0145										

X/LB 1.0250 1.0500

PHI

.000 -.0220 -.0239

MACH (2) = 2.950 ALPHA (2) = 5.000 PINF = .66350 Q(PS1) = 4.0417 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	1.0052	.6093	.2521	.1567		.1109	.0815	.0636		.0400					
10.000								.0702							
20.000								.0715							
24.500								.0711							
39.000								.0846							
163.000														.3078	
174.000												.5402		.5106	
180.000	1.0052				.1761			.1285	.1266	.1471	.4516				.4715

X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI

.000	.0291	.0258	.0344	.0336	.0332		.0315				.0049		.0004	-.0023	
23.000		.0255													
24.000		.0355													
31.500		.0400													
33.100			.0288												
35.000		.0421													
40.000		.0466	.0307												
45.000			.0359												
50.000	.0521														
51.600															
57.000		-.0050													
60.900		-.0054													

-.0171

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCB)

MACH (2) = 2.950 ALPHA (2) = 5.000

SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
65.000		-.0080													
68.000													-.0335		
69.000		-.0081													
79.300					-.0185										
95.500					-.0193		-.0159								
95.700															
96.300	.0533														
103.000					-.0206										
105.000															-.0577
112.600					-.0242										
117.500															
120.800															
127.900						.0715				.0832					
129.500								.1298							
130.000									.1147	.0223		.0054			
135.000		-.0527			-.0206										
139.600									.0930						
144.000												.0210			
155.000	.1159														
180.000	.0518	-.0367			-.0215										

X/LB 1.0250 1.0500

PHI

.000 -.0023 -.0037

MACH (2) = 2.950 ALPHA (3) = 10.000 PINF = .86350 Q(PSI) = 4.0417 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	1.0008	.7060	.3339	.2241		.1694	.1323	.1114		.0800					
10.000								.1089							
20.000								.1092							
24.500								.1059							
39.000								.0791							
163.000														.2381	
174.000															
180.000	1.0008				.1171			.0784	.0869	.0975	.3073	.4084	.3884		.3591

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(RQ3BCB)

DEPENDENT VARIABLE CP/CP5

[illegible]

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(R03ECB)

DEPENDENT VARIABLE CP/CPS

[illegible]

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCB)

MACH (2) = 2.950 ALPHA (4) = 20.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0500

PHI

.000 .1191 .1165

MACH (3) = 3.700 ALPHA (1) = -10.000 PINF = .32910 Q(PS1) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 .1250 .1500 .1600 .1650 .1700 .1750 .1800

PHI

.000	.9470	.3246	.0849	.0321		.0098	-.0025	-.0103		-.0170				
10.000								-.0129						
20.000								-.0146						
24.500								-.0161						
39.000								.0483						

163.000

.5448

174.000

180.000

.9470

.3818

.3226

.3177

.3555

.8668

.9434

.9605

.8971

X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI

.000	-.0195	-.0152	-.0132	-.0154	-.0156		-.0199			-.0351		-.0376	-.0377	
23.000		-.0380												
24.000	-.0276													
31.500	-.0279													
33.100		-.0389												
35.000	-.0325													
40.000	-.0377	-.0415												
45.000		-.0423												
50.000	.0217													
51.600												.0517		
57.000		.0177												
60.900		.0060												
65.000		-.0015												
68.000												.0270		
69.000		-.0056												
79.300					.0227									
95.500					.0268		.0152							
95.700		-.0096												
96.300	.0415													
103.000					.0210									
105.000														-.0363
112.600					-.0001									
117.500											.0162		.0225	
120.800								.0594						

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCB)

MACH (3) = 3.700 ALPHA (1) = -10.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
127.900						.2122									
129.500								.2142							
130.000									.1146	.0341		.0164			
135.000						.0088									
139.600									.1643						
144.000												.0792			
155.000	.2390														
180.000	.2143	.0241			.0239										
X/LB	1.0250	1.0500													
PHI															
.000	-.0394	-.0396													

MACH (3) = 3.700 ALPHA (2) = -5.000 PINF = .32910 Q(PSI) = 3.1539 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9759	.3980	.1253	.0591		.0306	.0136	.0037		-.0073					
10.000								.0017							
20.000								.0017							
24.500								.0026							
39.000								.0553							
163.000														.4579	
174.000															
180.000	.9759				.3023			.2439	.2382	.2702	.7117	.8086	.8128		.7681
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.9000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	-.0110	-.0122	-.0098	-.0105	-.0116		-.3103				-.0262		-.0291	-.0294	
23.000		-.0168													
24.000	-.0119														
31.500	-.0113														
33.100		-.0223													
35.000	-.0151														
40.000	-.0191	-.0269													
45.000		-.0307													
50.000	.0220														
51.600														.0254	
57.000		.0039													
60.900		.0038													

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCB)

MACH (3) = 3.700 ALPHA (2) = -5.000

SECTION (1) ORBITER FUSELAGE		DEPENDENT VARIABLE CP/CPS													
X/LB		.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000 1.0145
PHI															
65.000			-.0054												
68.000														.0100	
69.000			-.0097												
79.300						.0059									
95.500						.0067		.0073							
95.700			-.0061												
96.300		.0352													
103.000						.0025									
105.000															-.0379
112.600						.0016									
117.500															
120.800										.0801			.0040	.0088	
127.900							.2224								
129.500									.2090						
130.000										.1460	.0395		.0071		
135.000			-.0069			.0020									
139.600										.1630					
144.000													.0332		
155.000		.1949													
180.000		.1540	.0001			.0006									
X/LB		1.0250	1.0500												

PHI

.000 -.0310 -.0320

MACH (3) = 3.700 ALPHA (3) = .000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE		DEPENDENT VARIABLE CP/CPS													
X/LB		.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750 .1800
PHI															
.000		.9813	.4855	.1761	.0964		.0599	.0373	.0249		.0087				
10.000									.0229						
20.000									.0243						
24.500									.0263						
39.000									.0617						
163.000															.3681
174.000												.6502			
180.000		.9813				.2242			.1722	.1681	.1947	.5485	.6472		.6197

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(ROSCB)

DEPENDENT VARIABLE CP/CPS

[illegible]

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(RQ38CB)

(RQ38CB)

SECTION (1) ORBITER FUSELAGE		DEPENDENT VARIABLE CP/CPS													
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9881	.5883	.2412	.1469		.1025	.0739	.0572		.0346					
10.000								.0546							
20.000								.0563							
24.500								.0578							
39.000								.0679							
163.000														.2791	
174.000												.4818			
180.000	.9881				.1599			.1144	.1149	.1334	.3829		.4878		.4705
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0227	.0163	.0186	.0189	.0186		.0219				.0015		-.0020	-.0043	
23.000		.0163													
24.000	.0262														
31.500	.0297														
33.100		.0189													
35.000	.0308														
40.000	.0349	.0212													
45.000		.0250													
50.000	.0386														
51.600														-.0244	
57.000		-.0008													
60.900		-.0010													
65.000		-.0010													
68.000														-.0181	
69.000		-.0038													
79.300					-.0132										
95.500					-.0135		-.0166								
95.700		-.0093													
96.300	.0449														
103.000					-.0146										
105.000															-.0421
112.600					-.0176										
117.500															
120.800									.0567			.0005		-.0015	
127.900						.0374									
129.500								.0890							
130.00															

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ39CB)

MACH (3) = 3.700 ALPHA (4) = 5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0500

PHI
.000 -.0045 -.0060

MACH (3) = 3.700 ALPHA (5) = 10.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 .1250 .1500 .1600 .1650 .1700 .1750 .1800

PHI	.000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
.000	.9867	.6839	.3159	.2076		.1554	.1203	.1001		.0717					
10.000								.0978							
20.000								.0987							
24.500								.0964							
39.000								.0720							
163.000														.1959	
174.000															
180.000	.9867				.1096			.0710	.0802	.0894	.2215	.3045	.3524		.3441

X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8230 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI	.000	.0445	.0495	.0510	.0511	.0540		.0241		.0196	.0161
.000	.0555	.0445	.0495	.0510	.0511	.0540		.0241		.0196	.0161
23.000		.0442									
24.000	.0572										
31.500	.0587										
33.100		.0474									
35.000	.0587										
40.000	.0575	.0482									
45.000		.0529									
50.000	.0450										
51.600											
57.000		-.0061									
60.900		-.0083									
65.000		-.0062									
68.000											
69.000		-.0079									
79.300					-.0207						
95.500					-.0222	-.0252					
95.700		-.0083									
96.300	.0396										
103.000					-.0225						
105.000											
112.600					-.0234						
117.500											
120.800							.0625		-.0170	-.0206	

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TABULATED SOURCE DATA - 1H4

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UPWT 1059 (1H4) O1 ALONE

ORBITER FUSELAGE

(RQ3BCB)

MACH (3) = 3.700 ALPHA (5) = 10.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
127.900															
129.500															
130.000															
135.000															
139.600															
144.000															
155.000															
180.000															

X/LB 1.0250 1.0500

PHI

.000 .0179 .0162

MACH (3) = 3.700 ALPHA (6) = 20.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000															
10.000															
20.000															
24.500															
39.000															
163.000															
174.000															
180.000															

X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI

.000	.1622	.1432	.1479	.1513	.1552		.1667				.1117		.1033	.0924	
23.000		.1378													
24.000	.1565														
31.500	.1527														
33.100		.1332													
35.000	.1428														
40.000	.1072	.1256													
45.000		.1199													
50.000	.0422														
51.600															
57.000		.0281													
60.900		.0114													

-.0441

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALCNE

ORBITER FUSELAGE

(RQ3BCB)

MACH (3) = 3.700 ALPHA (6) = 20.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7000	.8000	.8050	.8290	.8520	.9500	.9630	.9750	1.0000	1.0145
PHI															
65.000		-.0125													
68.000													-.0435		
69.000		-.0125													
79.300					-.0420										
95.500					-.0179		-.0448								
95.700		-.0125													
96.300	.0209														
103.000					-.0171										
105.000															-.0458
112.600					-.0236										
117.500												-.0331		-.0340	
120.800									.0427						
127.900						-.0245									
129.500								.0316							
130.000									.0039	-.0282		-.0351			
135.000		-.0418			-.0404										
139.600									-.0197						
144.000												-.0369			
155.000	.0126														
180.000	-.0060	-.0340			-.0352										

X/LB 1.0250 1.0500

PHI

.000 .1022 .0953

MACH (4) = 4.600 ALPHA (1) = -10.000 PINF = .16595 Q(PS1) = 2.4580 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9561	.3304	.0920	.0397		.0180	.0179	.0009		-.0058					
10.000								-.0028							
20.000								-.0028							
24.500								-.0028							
39.000								.0529							
163.000														.5586	
174.000												.9885			
180.000	.9561				.3732			.3130	.3084	.3492	.8777		1.0258		.9771

ORIGINAL PAGE IS
OF POOR QUALITY

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TABULATED SOURCE DATA - 1H4

PAGE 264

UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3ECB)

MACH (4) = 4.600 ALPHA (1) = -10.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

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SECTION (1) ORBITER FUSELAGE		DEPENDENT VARIABLE (P/CPS)													
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9900	.4075	.1316	.0650		.0366	.0199	.0103		-.0003					
10.000								.0078							
20.000								.0089							
24.500								.0107							
39.000								.0570							
163.000														.4745	
174.000															
180.000	.9900				.2904			.2326	.2289	.2622	.7073	.8441	.8644		.9371
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	-.0044	-.0069	-.0066	-.0067	-.0109		-.0060				-.0190		-.0209	-.0206	
23.000		-.0113													
24.000	-.0062														
31.500	-.0033														
33.100		-.0117													
35.000	-.0077														
40.000	-.0095	-.0161													
45.000		-.0187													
50.000	.0247														
51.600														.0104	
57.000		.0070													
60.900		.0070													
65.000		.0010													
68.000													.0029		
69.000		-.0019													
79.300					.0046										
95.500					.0016		.0038								
95.700		-.0021													
96.300	.0432														
103.000					-.0064										
105.000															-.0272
112.600					-.0067										
117.500															
120.800									.0794						
127.900						.1754									
129.500								.2004							
130.000</															

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TABULATED SOURCE DATA - IN4

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UPWT 1059 (IN4) 01 ALONE

ORBITER FUSELAGE

(RQ39CB)

MACH (4) = 4.600 ALPHA (3) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9830	.9750	1.0000	1.0145
PHI															
127.900						.0636									
129.500								.0779							
130.000									.0953	.0397		.0020			
135.000															
139.600									.0895						
144.000												.0098			
155.000															
180.000															

PHI

127.900

129.500

130.000

135.000

139.600

144.000

155.000

180.000

X/LB 1.0250 1.0500

PHI

.000 -0.0148 -0.0162

MACH (4) = 4.600 ALPHA (4) = 5.000 PINF = .16595 Q(PSI) = 2.4580 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9961	.5936	.2453	.1478		.1024	.0745	.0582		.0368					
10.000								.0563							
20.000								.0582							
24.500								.0604							
39.000								.0673							
163.000														.2536	
174.000															
180.000	.9961				.1519			.1051	.1097	.1237	.3120	.4041	.4762		.4791

PHI

.000

10.000

20.000

24.500

39.000

163.000

174.000

180.000

X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI

.000

23.000

24.000

31.500

33.100

35.000

40.000

45.000

50.000

51.600

57.000

60.900

.0243

.0170

.0170

.0269

.0306

.0199

.0313

.0346

.0218

.0254

.0372

.0172

.0167

.0156

.0202

.0018

.0016

.0020

.0024

.0025

.0025

.0025

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OF POOR QUALITY

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 269

UPWT 1059 (IH4) O1 ALCNE

ORBITER FUSELAGE

(RQ3BCB)

MACH (4) = 4.600 ALPHA (5) = 10.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7000	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0626	.1233	.1298	.0768	.0781		.0858				.0222		.2194	.1107	
23.000		.0225													
24.000	.0350														
31.500	.4897														
33.100		.2129													
35.000	.3225														
40.000	.1937	.1785													
45.000		.2786													
50.000	.5406														
51.600													.2420		
57.000		.2858													
60.900		.1865													
65.000		.0089													
68.000													.0165		
69.000		-.0213													
79.300					-.0240										
95.500					-.0238										
95.700							-.0101								
96.300	.3853	-.0267													
103.000					.0408										
105.000															.0406
112.600					-.0101										
117.500															
120.800															
127.900						-.0231				.0124					
129.500								.2154							
130.000															
135.000		-.0013			.0334				.0138	.0128		-.0157			
139.600									-.0200						
144.000															
155.000	-.0124												.1703		
180.000	.1548	.0424			.1851										
X/LB	1.0250	1.0500													
PHI															
.000	.1182	.1585													

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OF POOR QUALITY

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 270

UPWT 1059 (1H4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCB)

MACH (4) = 4.600 ALPHA (6) = 20.000 PINF = .16595 Q(P51) = 2.4580 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CP5

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 271

UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ38CB)

MACH (4) = 4.600 ALPHA (6) = 20.000

SECTION (11) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0500

PHI
.000 .0965 .0896

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) O1 ALONE

ORB. UPPER WING

(RQ3UCB) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 3.000 BETA = .000

MACH (1) = 2.360 ALPHA (1) = .000 PINF = 1.1978 Q(PSI) = 4.6698 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1032		
.200	-.0228	-.0172	.0437
.600	-.0811	-.0989	
.800		-.0969	
.900		.1206	-.0897
.950		-.0802	

MACH (1) = 2.360 ALPHA (2) = 5.000 PINF = 1.1978 Q(PSI) = 4.6698 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0582		
.200	-.0643	-.0554	-.0022
.600	-.1119	-.1160	
.800		-.1118	
.900		.1233	-.1057
.950		-.0960	

MACH (1) = 2.360 ALPHA (3) = 10.000 PINF = 1.1978 Q(PSI) = 4.6698 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	-.0267		
.200	-.0863	-.0881	-.0433
.600	-.1237	-.1194	
.800		-.1205	
.900		.1278	-.1180
.950		-.1060	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE ORB. UPPER WING (RQSUCB)
 MACH (1) = 2.350 ALPHA (4) = 20.000 PINF = 1.1978 Q(P51) = 4.6698 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORB. UPPER WING DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	-.0851		
.200	-.1104	-.1278	-.1007
.600	-.1310	-.1279	
.800		-.1289	
.900		.1346	-.1175
.950		-.1146	

MACH (2) = 2.950 ALPHA (1) = .000 PINF = .66350 Q(P51) = 4.0417 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) ORB. UPPER WING DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1104		
.200	-.0139	.0117	.0735
.600	-.0589	-.0618	
.800		-.0618	
.900		.0565	-.0433
.950		-.0468	

MACH (2) = 2.950 ALPHA (2) = 5.000 PINF = .66350 Q(P51) = 4.0417 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) ORB. UPPER WING DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0660		
.200	-.0353	-.0158	.0291
.600	-.0702	-.0716	
.800		-.0701	
.900		.0585	-.0601
.950		-.0617	

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. UPPER WING

(RQ3UCB)

MACH (2) = 2.950 ALPHA (3) = 10.000 PINF = .66350 Q(PSI) = 4.0417 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	-.0127		
.200	-.0595	-.0490	-.0027
.600	-.0766	-.0746	
.800		-.0755	
.900		.0596	-.0685
.950		-.0656	

MACH (2) = 2.950 ALPHA (4) = 20.000 PINF = .66350 Q(PSI) = 4.0417 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	-.0557		
.200	-.0738	-.0740	-.0414
.600	-.0809	-.0801	
.800		-.0783	
.900		.0622	-.0703
.950		-.0691	

MACH (3) = 3.700 ALPHA (1) = -10.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1345		
.200	.0514	.0809	.1706
.600	-.0066	-.0085	
.800		-.0112	
.900		.0375	.0063
.950		.0024	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) O1 ALONE

ORB. UPPER WING

(RQ3UCB)

MACH (3) = 3.700 ALPHA (2) = -5.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1338		
.200	.0244	.0504	.1281
.600	-.0280	-.0255	
.800		-.0254	
.900		.0386	-.0071
.950		-.0193	

MACH (3) = 3.700 ALPHA (3) = .000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1064		
.200	.0032	.0278	.0874
.600	-.0362	-.0360	
.800		-.0358	
.900		.0394	-.0205
.950		-.0284	

MACH (3) = 3.700 ALPHA (4) = 5.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0611		
.200	-.0248	-.0013	.0465
.600	-.0444	-.0448	
.800		-.0444	
.900		.0399	-.0316
.950		-.0353	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALCNE

ORB. UPPER WING

(RQ3UCB)

MACH (3) = 3.700 ALPHA (5) = 10.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0029		
.200	-.0399	-.0186	.0222
.600	-.0477	-.0457	
.800		-.0455	
.900		.0420	-.0349
.950		-.0324	

MACH (3) = 3.700 ALPHA (6) = 20.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	-.0351		
.200	-.0441	-.0371	-.0090
.600	-.0479	-.0460	
.800		-.0461	
.900		.0447	-.0353
.950		-.0338	

MACH (4) = 4.600 ALPHA (1) = -10.000 PINF = .16595 Q(PSI) = 2.4580 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1287		
.200	.0528	.0836	.1941
.600	-.0034	.0016	
.800		.0018	
.900		.0403	.0283
.950		.0043	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. UPPER WING

(K23UCB)

MACH (4) = 4.600 ALPHA (2) = -5.000 PINF = .16595 Q(PSI) = 2.4580 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1187		
.200	.0255	.0808	.1486
.600	-.0201	-.0144	
.800		-.0187	
.900		.0366	.0081
.950		-.0099	

MACH (4) = 4.600 ALPHA (3) = .000 PINF = .16595 Q(PSI) = 2.4580 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0934		
.200	.0044	.0277	.0877
.600	-.0224	-.0165	
.800		-.0165	
.900		.0376	.0016
.950		-.0078	

MACH (4) = 4.600 ALPHA (4) = 5.000 PINF = .16595 Q(PSI) = 2.4580 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0579		
.200	-.0128	.0089	.0548
.600	-.0272	-.0251	
.800		-.0247	
.900		.0380	-.0099
.950		-.0134	

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. UPPER WING

(RQ3UCB)

MACH (4) = 4.600 ALPHA (5) = 10.000 PINF = .16595 Q(PSI) = 2.4580 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0418		
.200	.0411	.0408	.0405
.600	.0411	.0411	
.800		.0408	
.900		.0415	.0405
.950		.0411	

MACH (4) = 4.600 ALPHA (6) = 20.000 PINF = .16595 Q(PSI) = 2.4580 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	-.0170		
.200	-.0244	-.0161	.0002
.600	-.0255	-.0253	
.800		-.0240	
.900		.0422	-.0121
.950		-.0135	

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCB) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 BETA = .000

MACH (1) = 2.360 ALPHA (1) = .000 PINF = 1.1978 Q(PSI) = 4.6698 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000						.3114		.3530		-.0471
.001		.0038	.0068		.2037	.0363	.3202	.0374		
.002						.0005		.0291		
.003						.4286		.3763		
.004						.0887		.0845		
.005						.0139		.0269		
.025				.0330	.0194		.0406			
.045				.0354						
.100						.0064		.0327	.0379	
.153	-.0027									
.177					-.0044					
.200				-.0077						
.299	.0018									
.302				.0033			.0300			
.428						.0186				
.444	.0065									
.487					.0228					
.559				.0227						
.600						.0134				
.700						-.0085				
.736	.0152									
.800						-.0286				
.850						-.0417				
.900				-.0492		-.0542	-.0529		-.0515	

MACH (1) = 2.360 ALPHA (2) = .000 PINF = 1.1978 Q(PSI) = 4.6698 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CF/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000						.3940		.3694		-.0939
.001		.0304	.0291		.2978	.1291	.3827	.1216		
.002						.0865		.1130		
.003						.4097		.3349		
.004						.1933		.1765		
.005						.1039		.1117		

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UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCB)

MACH (1) = 2.360 ALPHA (2) = 5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP' CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CH										
.025				.1096	.1196		.1281			
.045				.1123						
.100						.0832		.1202	.1177	
.153	.0312				.0700					
.177										
.200				.0479						
.299	.0287			.0540			.1087			
.302										
.428						.0914				
.444	.0364									
.487					.0825					
.559				.0708						
.600					.0718					
.700					.0414					
.736	.0510									
.800					.0131					
.850					-.0051					
.900				-.0195	-.0226	-.0111		-.0143		

MACH (1) = 2.360 ALPHA (3) = 10.000 PINF = 1.1978 Q(PSI) = 4.6698 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP' CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CH										
.000						.4561		.3680		-.1157
.001		.0263	-.0084		.3494	.2344	.4304	.2423		
.002						.1739		.2251		
.003						.3470		.2448		
.004						.3044		.2870		
.005						.2073		.2298		
.025				.1419	.2147		.2276			
.045				.1528						
.100						.1762		.2391	.2002	
.153	.0669									
.177					.1471					
.200				.1013						
.299	.0632									
.302				.1058			.2009			
.428						.1605				
.444	.0710				.1506					
.487										
.559				.1270						
.600						.1382				

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TABULATED SOURCE DATA - IH4

PAGE 281

UPWT 1059 (IH4) O1 ALONE

ORB. LOWER WING

(RQ3LCB)

MACH (1) = 2.360 ALPHA (3) = 10.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.700						.0986				
.736	.0941									
.800						.0622				
.850						.0396				
.900				.0180		.0167	.0360		.0262	

MACH (1) = 2.360 ALPHA (4) = 20.000 PINF = 1.1978 Q(PSI) = 4.6698 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.4824		.2919		-.1170
.001		.0489	-.0020		.3504	.4046	.4809	.4721		
.002						.3427		.4332		
.003						.2255		.1041		
.004						.4738		.4937		
.005						.3705		.4449		
.025				.1935	.3207		.4411			
.045				.2243						
.100						.3543		.4394	.2777	
.153	.1538									
.177					.2852					
.200				.2142						
.299	.1639									
.302				.2271			.3792			
.428						.3157				
.444	.1761									
.487					.3083					
.559				.2682						
.600						.2952				
.700						.2361				
.736	.2194									
.800						.1840				
.850						.1537				
.900				.1223		.1164	.1468		.1243	

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UPWT 1059 (IH4) O1 ALONE

ORB. LOWER WING

(RQ3LCB)

MACH (2) = 2.950 ALPHA (2) = 5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.302				.0520			.1368			
.428						.0850				
.444	.0348									
.487					.0762					
.559				.0656						
.600						.0723				
.700						.0406				
.736	.0492									
.800						.0179				
.850						.0038				
.900				-.0096		-.0093	.0012		.0063	

MACH (2) = 2.950 ALPHA (3) = 10.000 PINF = .66350 Q(P51) = 4.0417 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.4714		.3999		-.0650
.001		.0306	.0074		.3734	.2308	.4531	.2319		
.002						.1720		.2112		
.003						.3847		.2958		
.004						.3048		.2884		
.005						.1994		.2167		
.025				.1333	.2111		.2231			
.045				.1419						
.100						.1632		.2225	.1942	
.153	.0618									
.177					.1301					
.200				.0918						
.299	.0618									
.302				.0957			.1842			
.428						.1502				
.444	.0672									
.487					.1366					
.559				.1090						
.600						.1291				
.700						.0956				
.736	.0829									
.800						.0642				
.850						.0446				
.900				.0242		.0259	.0457		.0453	

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UPWT 1059 (1H4) 01 ALONE

ORB. LOWER WING

(RQ3LCB)

MACH (2) = 2.950 ALPHA (4) = 20.000 PINF = .66350 Q(PSI) = 4.0417 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE C²/CPS

2Y/8W	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000				.5581		.3826		
.001	.0610	.0232	.4104	.4003	.5335	.4755		-.0536
.002				.3226		.4296		
.003				.3151		.1750		
.004				.4896		.5099		
.005				.3618		.4436		
.025		.1975	.3272		.4358			
.045		.2235						
.100				.3502		.4340	.2981	
.153	.1464							
.177			.2726					
.200		.2084						
.299	.1607							
.302		.2173			.3676			
.428				.3100				
.444	.1721							
.487			.2900					
.559		.2389						
.600				.2839				
.700				.2291				
.736	.1982							
.800				.1799				
.850				.1513				
.900		.1178		.1204	.1523		.1382	

MACH (3) = 3.700 ALPHA (1) = -10.000 PINF = .329 0 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CP5

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CH

.000				.2188		.3240		
.001	- .0467	- .0470		.1114	.0024	.2357	- .0007	- .0305
.002					- .0195		- .0093	
.003					.4274		.4942	
.004					.0464		.0191	
.005					- .0115		- .0079	
.025			- .0446	- .0207		- .0048		
.045			- .0455					
.100					- .0168		- .0109	- .0043
.153	- .0415							
.177				- .0424				
.200			- .0424					
.299	- .0426							

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UPWT 1059 (IH4) OI ALONE

ORB. LOWER WING

(RQ3LCB)

MACH (3) = 3.700 ALPHA (1) = -10.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.302				-.0424			-.0190			
.428						-.0438				
.444	-.0424									
.487					-.0439					
.559				-.0439						
.600						-.0436				
.700						-.0450				
.736	-.0438									
.800						-.0478				
.850						-.0469				
.900				-.0455		-.0458	-.0442		-.0379	

MACH (3) = 3.700 ALPHA (2) = -5.000 PINF = .32913 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.2682		.3771		-.0038
.001		-.0362	-.0379		.1594	.0249	.2882	.0321		
.002						-.0038		.0124		
.003						.4578		.4927		
.004						.0737		.0602		
.005						.0078		.0176		
.025				-.0356	-.0038		.0203			
.045				-.0356						
.100						-.0022		.0159	.0269	
.153	-.0281									
.177					-.0353					
.200				-.0352						
.299	-.0298									
.302				-.0355			.0019			
.428						-.0207				
.444	-.0301					-.0305				
.487										
.559				-.0303						
.600						-.0295				
.700						-.0376				
.736	-.0200									
.800						-.0425				
.850						-.0441				
.900				-.0404		-.0422	-.0409		-.0277	

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UPWT 1059 (IH4) 01 ALONE				ORB. LOWER WING		(RQ3LCB)	
MACH (3) =	3.700	ALPHA (3) =	.000	PINF =	.32910	Q(PSI) =	3.1538
						RN/L =	3.0000
						CPSTG =	1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/6W	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000				.3174		.3997		.0006
.001		.0006	.0017	.2393		.0666	.3436	
.002						.0295		
.003						.4422		
.004						.1214		
.005						.0431		
.025			.0229	.0426		.0591		
.045			.0232					
.100					.0288		.0565	.0669
.153	-.0029							
.177				.0027				
.200			-.0065					
.299	-.0023							
.302			-.0033			.0384		
.428					.0148			
.444	-.0007							
.487				.0010				
.559			.0006					
.600					.0072			
.700					-.0068			
.736	.0004							
.800					-.0174			
.850					-.0243			
.900			-.0275		-.0288	-.0244		-.0155

MACH (3) = 3.700 ALPHA (4) = 5.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/8W	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000				.4060		.4187		
.001	.0215	.0201	.3207	.1399	.4081	.1394		-.0272
.002				.0882		.1112		
.003				.4390		.3923		
.004				.2018		.2082		
.005				.1068		.1148		
.025		.0845	.1222		.1253			
.045		.0847						
.100				.0836		.1178	.1178	
.153	.0247							
.177			.0547					
.200		.0326						
.299	.0187							

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UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCB)

MACH (3) = 3.700 ALPHA (4) = 5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CP5

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.302				.0345			.0908			
.428						.0643				
.444	.0189									
.487					.0581					
.559				.0437						
.600						.0539				
.700						.0329				
.736	.0265									
.800						.0150				
.850						.0043				
.900				-.0077		-.0049	.0051		.0125	

MACH (3) = 3.700 ALPHA (5) = 10.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CP5

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.4998		.4348		-.0341
.001		.0317	.0157		.3955	.2360	.4803	.2260		
.002						.1724		.1923		
.003						.4270		.3290		
.004						.2983		.3003		
.005						.1977		.2000		
.025				.1238	.2149		.2299			
.045				.1322						
.100						.1531		.2153	.1793	
.153	.0589									
.177					.1125					
.200				.0780						
.299	.0548									
.302				.0800			.1656			
.428						.1321				
.444	.0572									
.487					.1166					
.559				.0895						
.600						.1130				
.700						.0816				
.736	.0670									
.800						.0551				
.850						.0395				
.900				.0204		.0251	.0434		.0458	

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UPWT 1059 (144) 01 ALONE

ORB. LOWER WING

(RQ3LCB)

MACH (3) = 3.700 ALPHA (6) = 20.000 PINF = .32910 Q(P51) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1)ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CH

.000				.6404		.3413		
.001	.0686	.0399	.4857	.4250	.6195	.4073		-.0324
.002				.3323		.3711		
.003				.3971		.1851		
.004				.5218		.4558		
.005				.3819		.3840		
.025		.2095	.3495		.4555			
.045		.2324						
.100				.3378		.3680	.2778	
.153	.1439							
.177			.2597					
.200		.1981						
.209	.1534							
.302		.2051			.3401			
.428				.3098				
.444	.1639							
.487			.2760					
.559		.2229						
.600				.2766				
.700				.2221				
.736	.1849							
.800				.1738				
.850				.1450				
.900		.1105		.1169	.1310		.1319	

MACH (4) = 4.600 ALPHA (1) = -10.000 PINF = .16595 Q(P51) = 2.4580 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CFS

2Y/8W	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000				.2292		.3835		- .0088
.001	-.0213	-.0228	.1398	.0228	.2657	.0182		
.002				.0009		.0039		
.003				.4458		.5709		
.004				.0684		.0480		
.005				.0085		.0066		
.025		-.0201	.0017		.0171			
.045		-.0213						
.100				.0009		.0085	.0171	
.153	-.0186							
.177			-.0237					
.200		-.0266						
.299	-.0250							

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UPWT 1059 (IH4) OI ALONE

ORB. LOWER WING

(RQ3LCB)

MACH (4) = 4.600 ALPHA (1) = -10.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.302				-.0259			-.0069			
.428						-.0171				
.444	-.0253									
.487					-.0241					
.559				-.0245						
.600						-.0210				
.700						-.0223				
.736	-.0243									
.800						-.0231				
.850						-.0242				
.900				-.0252		-.0250		-.0180		

MACH (4) = 4.600 ALPHA (2) = -5.000 PINF = .16595 Q(PSI) = 2.4580 RM/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000						.2919		.4483		.0070
.001		-.0187	-.0216		.1746	.0364	.3435	.0557		
.002						.0114		.0313		
.003						.4977		.5863		
.004						.0894		.0904		
.005						.0221		.0379		
.025				-.0172	.0166		.0112			
.045				-.0183						
.100						.0135		.0361	.0452	
.153	-.0147									
.177					-.0178					
.200				-.0215						
.299	-.0181									
.302				-.0203			.0109			
.428						-.0072				
.444	-.0192									
.487					-.0182					
.559				-.0194						
.600						-.0145				
.700						-.0203				
.736	-.0197									
.800						-.0236				
.850						-.0251				
.900				-.0249		-.0253	-.0128		-.0163	

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UPWT 1059 (IH4) 01 ALONE

ORB, LOWER WING

(RQ3LCB)

MACH (4) = 4.600 ALPHA (3) = .000 PINF = .16495 Q(PS1) = 2.4580 RN/L = 3.0100 CPSTG = 1.9033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE (P/CPS)

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000				.3509		.4510		.0067
.001		.0042	.0045	.2573	.0804	.3552	.1018	
.002					.0402		.0694	
.003					.4695		.4992	
.004					.1427		.1499	
.005					.0568		.0769	
.025			.0281	.0586		.0800		
.045			.0277					
.100					.0397		.0737	.0752
.153	.0012							
.177				.0089				
.200			-.0013					
.299	-.0003							
.302			.0000			.0450		
.428					.0210			
.444	.0001							
.487				.0115				
.559			.0040					
.600					.0120			
.700					-.0022			
.738	.0002							
.800					-.0116			
.850					-.0159			
.900			-.0196		-.0184	-.0140		-.0048

MACH (4) = 4.600 ALPHA (4) = 5.000 PINF = .16535 Q(PSI) = 2.4580 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1)ORB. LOWER WING

DEPENDENT VARIABLE C²/CPS

2Y/8W	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000				.4401		.4570		
.001	.0221	.0199		.1438	.4570	.1621		
.002			.3465	.0920		.1211		
.003				.4755		.4254		
.004				.2169		.2073		
.005				.1122		.1281		
.025		.0809	.1269		.1433			
.045		.0809						
.100				.0872		.1151	.1100	
.153	.0262							
.177								
.200			.0522					
.299	.0198		.0317					

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UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCB)

MACH (4) = 4.600 ALPHA (4) = 5.000

SECTION (1) ORB. LOWER WING		DEPENDENT VARIABLE CP/CPS								
2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.302				.0324			.0945			
.428						.0653				
.444	.0203									
.487					.0544					
.559				.0396						
.600						.0529				
.700						.0337				
.736	.0230									
.800						.0179				
.850						.0081				
.900				-.0063		.0002	.0096		.0154	

MACH (4) = 4.600 ALPHA (5) = 10.000 PINF = .16565 Q(P51) = 2.4580 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING		DEPENDENT VARIABLE CF/CPS								
2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.0421		.0410		.0410
.001		.0410	.0406		.0411	.0415	.0410	.0410		
.002						.0411		.0410		
.003						.0408		.0410		
.004						.0408		.0410		
.005						.0410		.0406		
.025				.0434	.0413		.0410			
.045				.0414						
.100						.0455		.0410	.0410	
.153	.0404									
.177					.0410					
.200				.0411						
.299	.0406									
.302				.0410			.0410			
.428						.0415				
.444	.0426									
.487					.0413					
.559				.0409						
.600						.0411				
.700						.0415				
.736	.0413									
.800						.0408				
.850						.0415				
.900				.0444		.0408	.0410		.0413	

ORIGINAL PAGE IS
OF POOR QUALITY

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) OI ALONE

ORB. LOWER WING

(RQ3LCB)

MACH (4) = 4.600

ALPHA (6) = 20.000

PINF = .16595

Q(PSI) = 2.4580

RN/L = 3.0100

CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CM										
.000						.7340		.3550		-.0098
.001		.0767	.0520		.5799	.4819	.4878	.4109		
.002						.3820		.3660		
.003						.4785		.1839		
.004						.5728		.4747		
.005						.4322		.3783		
.025				.2309	.3873		.3970			
.045				.2492						
.100						.3498		.3805	.2830	
.153	.1474									
.177					.2646					
.200				.2045						
.299	.1571									
.302				.2103			.3189			
.428						.3240				
.444	.1567									
.487					.2753					
.559				.2248						
.600						.2745				
.700						.2144				
.736	.1845									
.800						.1636				
.850						.1338				
.900				.1063		.1074	.1221		.1374	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. VERT. TAIL

(RQ3VCB) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 3.000 BETA = .000

MACH (1) = 2.360 ALPHA (1) = .000 PINF = 1.1978 Q(PSt) = 4.6698 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .4097 .3797 .2956 .3855
 .300 .1370 .1315 .1187
 .500 .1029
 .700 -.0415
 .900 -.0619 -.0526 -.0361

MACH (1) = 2.360 ALPHA (2) = 5.000 PINF = 1.1978 Q(PSt) = 4.6698 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3512 .3381 .2462 .3023
 .300 .1045 .1008 .0928
 .500 .0744
 .700 -.0545
 .900 -.0719 -.0647 -.0485

MACH (1) = 2.360 ALPHA (3) = 10.000 PINF = 1.1978 Q(PSt) = 4.6698 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3258 .2783 .1904 .2442
 .300 .0852 .0761 .0676
 .500 .0517
 .700 -.0531
 .900 -.0804 -.0729 -.0589

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. VERT. TAIL

(RQ3VCB)

MACH (1) = 2.360 ALPHA (4) = 20.000 PINF = 1.1978 Q(PSI) = 4.6698 RN/L = 3.0000 CPSTG = 1.7063

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.4083	.2533	.1155	.1500
.300	.0688	.0474	.0322	
.500		.0354		
.700		-.0817		
.900	-.1074	-.0942	-.0752	

MACH (2) = 2.950 ALPHA (1) = .000 PINF = .66350 Q(PSI) = 4.0417 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3948	.3703	.2983	.3866
.300	.1371	.0795	.0429	
.500		.1001		
.700		-.0045		
.900	-.0334	-.0175	-.0121	

MACH (2) = 2.950 ALPHA (2) = 5.000 PINF = .66350 Q(PSI) = 4.0417 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3454	.3280	.2350	.3042
.300	.1031	.0746	.0441	
.500		.0806		
.700		-.0194		
.900	-.0419	-.0312	-.0195	

MACH (2) = 2.950 ALPHA (3) = 10.000 PINF = .66350 Q(PSI) = 4.0417 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3064	.2609	.2002	.2496
.300	.0836	.0590	.0385	
.500		.0590		
.700		-.0292		
.900	-.0502	-.0393	-.0280	

DATE 20 APR 78

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) OI ALONE ORB. VERT. TAIL (RQ3VCB)
 MACH (2) = 2.950 ALPHA (4) = 20.000 PINF = .66350 Q(PSI) = 4.0417 RN/L = 3.0200 CPSTG = 1.7529

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3394 .1991 .1183 .1485
 .300 .0229 .0480 .0330
 .500 .0308
 .700 -.0493
 .900 -.0719 -.0594 -.0419

MACH (3) = 3.700 ALPHA (1) = -10.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .5536 .6458 .5263 .6844
 .300 .1223 .0787 .0852
 .500 .0903
 .700 .0179
 .900 .0074 .0133 -.0044

MACH (3) = 3.700 ALPHA (2) = -5.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3786 .4854 .4050 .5315
 .300 .0918 .0542 .0505
 .500 .0672
 .700 .0092
 .900 -.0051 .0020 -.0142

MACH (3) = 3.700 ALPHA (3) = .000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3648 .3384 .2971 .3939
 .300 .0515 .0390 .0265
 .500 .0488
 .700 .0038
 .900 -.0179 -.0034 -.0189

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 296

UPWT 1059 (IH4) 01 ALONE ORB. VERT. TAIL (RQ3VCB)
 MACH (3) = 3.700 ALPHA (4) = 5.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3280 .2889 .2139 .2834

.300 .0536 .0313 .0163

.500 .0357

.700 -.0073

.900 -.0257 -.0145 -.0207

MACH (3) = 3.700 ALPHA (5) = 10.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .2725 .2410 .1967 .2428

.300 .0396 .0225 .0181

.500 .0264

.700 -.0182

.900 -.0325 -.0247 -.0240

MACH (3) = 3.700 ALPHA (6) = 20.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .2245 .1666 .1040 .1329

.300 -.0112 .0186 .0126

.500 .0156

.700 -.0343

.900 -.0434 -.0396 -.0264

MACH (4) = 4.600 ALPHA (1) = -10.000 PINF = .16595 Q(PSI) = 2.4580 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .5266 .6840 .5663 .7587

.300 .0963 .0748 .0815

.500 .0752

.700 .0134

.900 .0121 .0095 .0029

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 297

UPWT 1059 (1H4) OI ALONE ORB. VERT. TAIL (RQ3VCB)
 MACH (4) = 4.600 ALPHA (2) = -5.000 PINF = .16595 Q(PSI) = 2.4580 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3035 .4568 .4114 .5508
 .300 .0579 .0450 .0471
 .500 .0497
 .700 .0063
 .900 .0026 -.0069

MACH (4) = 4.600 ALPHA (3) = .000 PINF = .16595 Q(PSI) = 2.4580 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3235 .2769 .2811 .3863
 .300 .0300 .0214 .0228
 .500 .0217
 .700 -.0056
 .900 -.0087 -.0075 -.0135

MACH (4) = 4.600 ALPHA (4) = 5.000 PINF = .16595 Q(PSI) = 2.4580 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .2884 .2534 .1774 .2577
 .300 .0313 .0145 .0089
 .500 .0134
 .700 -.0123
 .900 -.0151 -.0147 -.0171

MACH (4) = 4.600 ALPHA (5) = 10.000 PINF = .16595 Q(PSI) = 2.4580 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .0405 .0406 .0408 .0411
 .300 .0413 .0406 .0408
 .500 .0406
 .700 .0403
 .900 .0406 .0403 .0408

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 OF POOR QUALITY

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 298

UPWT 1059 (IH4) 01 ALONE

ORB. VERT. TAIL

(RQ3VCB)

MACH (4) = 4.600 ALPHA (6) = 20.000 PINF = .16535 Q(PSI) = 2.4580 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE C²/CPS

Z/BV	.2990	.5320	.7650	.9050
X/CV				
.000	.0955	.1544	.0615	.0860
.300	-.0028	.0049	.0039	
.500		-.0113		
.700		-.0244		
.900	-.0263	-.0261	-.0204	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) OI ALONE

ORBITER FUSELAGE

(RQ38CC) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 5.000 BETA = .000

MACH (1) = 2.950 ALPHA (1) = .000 PINF = 1.0999 Q(PSI) = 6.6993 RN/L = 5.0025 CPSTG = 1.7529

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CF/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9919	.5082	.1801	.0998		.0627	.0403	.0269		.0094					
10.000								.0256							
20.000								.0267							
24.500								.0286							
39.000								.0702							
163.000														.3823	
174.000												.6700		.6554	.5988
180.000	.9919				.2409			.1888	.1834	.2030	.5977				
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8003	.8650	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0014	.0015	.0080	.0086	.0083		.0083				-.0146		-.0190	-.0214	
23.000		-.0009													
24.000	.0070														
31.500	.0107														
33.100		-.0007													
35.000	.0116														
40.000	.0133	-.0024													
45.000		-.0052													
50.000	.0349														
51.600														.0088	
57.000		.0015													
60.900		-.0030													
65.000		-.0103													
68.000															
69.000		-.0155												-.0146	
79.300						-.0073									
95.500						-.0030	-.0043								
95.700		-.0123													
96.300	.0429														
103.000						-.0021									
105.000															-.0495
112.600						-.0019									
117.500															
120.800									.0952						
127.900								.1488							
129.500									.2033						

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

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UPWT 1059 (1H4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCC)

MACH (1) = 2.950 ALPHA (1) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
130.000									.1510	.0341		.0133			
135.000		-.0417				-.0072									
139.600									.1541						
144.000												.0364			
155.000	.1461														
180.000	.0846	-.0166				-.0105									
X/LB	1.0250	1.0500													
PHI															
.000	-.0222	-.0236													

MACH (1) = 2.950 ALPHA (2) = 5.000 PINF = 1.0996 Q(P51) = 6.6993 RN/L = 5.0025 CPSTG = 1.7529

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	1.0044	.6048	.2457	.1513		.1058	.0766	.0606		.0377					
10.000								.0591							
20.000								.0600							
24.500								.0608							
39.000								.0748							
163.000														.3072	
174.000												.5489			
180.000	1.0044				.1770			.1300	.1260	.1449	.4683		.5234		.4770
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0254	.0222	.0282	.0253	.0291		.0301				.0036		-.0004	-.0027	
23.000		.0218													
24.000	.0317														
31.500	.0358														
33.100		.0252													
35.000	.0380														
40.000	.0427	.0274													
45.000		.0326													
50.000	.0470														
51.600															
57.000		-.0056											-.0228		
60.900		-.0063													
65.000		-.0071													
68.000														-.0352	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 301

UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3LCC)

MACH (1) = 2.950 ALPHA (2) = 5.000

SECTION (1) ORBITER FUSELAGE		DEPENDENT VARIABLE CP/CPS													
X/LB		.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000 1.0145
PHI															
69.000			-.0113												
79.300						-.0185									
95.500						-.0187		-.0164							
95.700			-.0123												
96.300		.0432													
103.000						-.0200									
105.000															
112.600						-.0231									-.0566
117.500															
120.800															
127.900							.0721			.0946					
129.500									.1288						
130.000										.1142	.0233		.0025		
135.000			-.0525			-.0198									
139.600										.0962					
144.000													.0205		
155.000		.1116													
180.000		.0479	-.0363			-.0205									
X/LB		1.0250	1.0500												
PHI															
.000		-.0030	-.0031												

MACH (1) = 2.950 ALPHA (3) = 10.000 PINF = 1.0998 Q(PSI) = 6.6993 RN/L = 5.0025 CPSTG = 1.7529

SECTION (1) ORBITER FUSELAGE		DEPENDENT VARIABLE CP/CPS													
X/LB		.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750 .1800
PHI															
.000		.9996	.6982	.3260	.2165		.1625	.1238	.1042		.0756				
10.000									.1016						
20.000									.1018						
24.500									.0983						
39.000									.0759						
163.000															.2416
174.000															
180.000		.9996				.1192		.0797	.0838	.0940	.3428	.4342	.4024		.3650
X/LB		.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000 1.0145
PHI															
.000		.0585	.0492	.0550	.0556	.0556		.0642				.0328		.0280	.0257
23.000			.0490												

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(RQ3BCC)

DEPENDENT VARIABLE CP/CPS

[illegible]

PAGE 303

(RQ3BCC)

DEPENDENT VARIABLE CP/CPS

[illegible]

TABULATED SOURCE DATA - 1H4

UPWT 1059 (1H4) 01 ALCNE

ORBITER FUSELAGE

(RG3BCC)

MACH (2) = 3.700 ALPHA (1) = -5.000

SECTION (ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--------	--------

PHI

127.900

129,500

130.000

135.000

139.600

144.000

155.000

180.000

X/LB	1.0250	1.0500
------	--------	--------

PHI

11
11,000

MACH (2) = 3.700 ALPHA (2) = .000 PINF = .54768 Q(PS1) = 5.2486 RN/L = 4.9900 CPSTG = 1.7839

SECTION 1 ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

PHI

.300

10.000

20.000

24.500

39.000

163.000

174.000

180.000

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--------	--------

PHI

.000

23.000

24.000

31.500

33.100

35.000

40.000

45.000

50.000

51.600

57.000
82.000

60.900

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

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UPWT 1059 (1H4) 01 ALONE

ORBITER FUSELAGE

(RQ38CC)

MACH (2) = 3.700 ALPHA (2) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
65.000		-.0050													
68.000													-.0119		
69.000		-.0081													
79.300					-.0053										
95.500					-.0040		-.0068								
95.700		-.0059													
96.300	.0345														
103.000					-.0040										
105.000															
112.600					-.0047										-.0400
117.500															
120.800									.0863			.0084		.0131	
127.900						.0967									
129.500								.1555							
130.000									.1336	.0375		.0017			
135.000		-.0233			-.0087										
139.600									.1330						
144.000												.0210			
155.000	.1471														
180.000	.1037	-.0099			-.0077										
X/LB	1.0250	1.0500													
PHI															
.000	-.0180	-.0193													

MACH (2) = 3.700 ALPHA (3) = 5.000 PINF = .54768 Q(PSI) = 5.2486 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0900	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9831	.5811	.2334	.1406		.0984	.0709	.0560		.0364					
10.000								.0597							
20.000								.0601							
24.500								.0617							
39.000								.0734							
163.000														.2845	
174.000												.5099			
180.000	.9831				.1601			.1146	.1128	.1292	.4106		.5002		.4754

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(RQ3BCC)

DEPENDENT VARIABLE (P/CPS)

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (1H4) 01 ALONE

ORBITER FUSELAGE

(RQ39CC)

MACH (2) = 3.700

ALPHA (4) = 10.000 PINF = .54768

PINF = .54768

$$Q(PSI) = 5.2486$$

RN/L = 4.9900

CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CF/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 309

UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCC)

MACH (2) = 3.700 ALPHA (4) = 10.000

SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0500

PHI
.000 .0189 .0181

MACH (2) = 3.700 ALPHA (5) = 20.000 PINF = .54768 Q(PSI) = 5.2486 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE DEPENDENT VARIABLE CP/CPS

X/LB .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 .1250 .1500 .1600 .1650 .1700 .1750 .1800

PHI														
.000	.9308	.8508	.4929	.3621		.2954	.2625	.2356		.1957				
10.000								.2321						
20.000								.2273						
24.500								.2109						
39.000								.0831						
163.000													.0418	
174.000														
180.000	.9308				.0375		.0253	.0295	.0367	.0433	.0712	.1277		.1467

X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI														
.000	.1707	.1531	.1409	.1467	.1485		.1616			.1073		.1014	.0984	
23.000		.1478												
24.000	.1657													
31.500	.1547													
33.100		.1469												
35.000	.1464													
40.000	.1160	.1383												
45.000		.1343												
50.000	.0414													
51.600														
57.000		-.0256											-.0451	
60.900		-.0109												
65.000		-.0107												
68.000													-.0447	
69.000		-.0086												
79.300					-.0445									
95.500					-.0179		-.0481							
95.700		-.0129												
96.300	.0183													
103.000					-.0167									
105.000													-.0474	
112.600					-.0233									
117.500														
120.800								.0437			-.0348		-.0359	

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OF POOR QUALITY

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) OI ALONE

ORBITER FUSELAGE

(RQ3BCC)

MACH (2) = 3.700 ALPHA (5) = 20.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
127.900															
129.500															
130.000															
135.000															
139.600															
144.000															
155.000															
180.000															

PHI

127.900

129.500

130.000

135.000

139.600

144.000

155.000

180.000

X/LB 1.0250 1.0500

PHI

.000

.1014

.1014

MACH (3) = 4.600 ALPHA (1) = -5.000 PINF = .27610 Q(PSI) = 4.0900 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000															
10.000															
20.000															
24.500															
39.000															
163.000															
174.000															
180.000															

PHI

.000

.9992

.4052

.1287

.0635

.0150

.0219

.0123

.0107

.0109

.0125

.0609

.0016

.4732

.8696

.8894

.8492

X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI

.000

.23.000

.24.000

.31.500

.33.100

.35.000

.40.000

.45.000

.50.000

.51.600

.57.000

.60.900

.0023

.0034

.0023

.0114

.0055

.0078

.0155

.0183

.0285

.0090

.0087

.0181

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALCNE

ORBITER FUSELAGE

(RQ3BCC)

MACH = 4.600 ALPHA (1) = -5.000

SECTION (1) ORBITER FUSELAGE	DEPENDENT VARIABLE CP/CPS														
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
65.000		.0024													
68.000													.0050		
69.000		-.0021													
79.300					.0063										
95.500					.0062		.0062								
95.700			.0015												
96.300	.0413														
103.000					.0012										
105.000															-.0274
112.600					.0005										
117.500												.0006		.0042	
120.800									.0773						
127.900						.1963									
129.500								.1908							
130.000									.1354	.0362		.0031			
135.000		-.0041			.0063										
139.600									.1451						
144.000												.0129			
155.000	.2016														
180.000	.1655	.0014			.0120										

X/LB 1.0250 1.0500

PHI
.000 -0.0212 -0.0218

MACH (3) = 4.600 ALPHA (2) = .000 PINF = .27610 Q(P51) = 4.0900 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE	DEPENDENT VARIABLE CP/CPS														
X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	1.0039	.4927	.1775	.0994		.0628	.0466	.0342		.0172					
10.000								.0320							
20.000								.0337							
24.500								.0356							
39.000								.0683							
163.000														.3691	
174.000												.6689			
180.000	1.0039				.2185			.1641	.1597	.1827	.5450	.6689	.6875		.6725

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{RQ3BCC}

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (1H4) 01 ALONE

ORBITER FUSELAGE

(RQ39CC)

MACH (3) = 4.600

ALPHA (3) = 5.000

PINF = .27610

Q(PSI) = 4.0900

RN/L = 5.0000

CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE (P/CPS)

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	1.0094	.5966	.2416	.1463		.1025	.0771	.0614		.0390					
10.000								.0593							
20.000								.0611							
24.500								.0625							
39.000								.0705							
163.000														.2672	
174.000												.4672			
180.000	1.0094				.1532			.1069	.1078	.1226	.3563		.4910		.4899
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0269	.0189	.0199	.0198	.0196		.0201				.0046		.0018	.0001	
23.000		.0192													
24.000	.0294														
31.500	.0328														
33.100		.0221													
35.000	.0340														
40.000	.0374	.0246													
45.000		.0287													
50.000	.0408														
51.600															
57.000		.0045													
60.900		.0046													
65.000		.0043													
68.000															
69.000		.0008													
79.300															
95.500															
95.700															
96.300	.0430														
103.000															
105.000															
112.600															
117.500															
120.800															
127.900															
129.500															
130.000															
135.000															
139.600															
144.000															
155.000	.1081														
180.000	.0776	.0113													

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DATE 20 APR 78

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) OI ALONE

ORBITER FUSELAGE

(RQ3BCC)

MACH (3) = 4.600 ALPHA (3) = 5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0500

PHI

.000 -.0006 -.0019

MACH (3) = 4.600 ALPHA (4) = 10.000 PINF = .27610 Q(PS1) = 4.0900 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CF/CPS

X/LB .0000 .0050 .0200 .0400 .0500 .0600 .0800 .1000 .1250 .1500 .1600 .1650 .1700 .1750 .1800

PHI

.000	1.0006	.6922	.3154	.2055		.1534	.1254	.1007		.0717				
10.000								.0972						
20.000								.0989						
24.500								.0968						
39.000								.0710						

163.000

174.000

180.000

X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI

.000	.0555	.0437	.0473	.0479	.0479		.0504			.0257		.0217	.0191	
23.000		.0442												
24.000	.0566													
31.500	.0577													
33.100		.0471												
35.000	.0577													
40.000	.0559	.0482												
45.000		.0526												
50.000	.0431													
51.600														
57.000		.0004												
60.900		.0003												
65.000		.0002												
68.000														
69.000		.0002												
79.300														
95.500														
95.700		.0001												
96.300	.0381													
103.000														
105.000														
112.600														
117.500														
120.800														

23.000

24.000

31.500

33.100

35.000

40.000

45.000

50.000

51.600

57.000

60.900

65.000

68.000

69.000

79.300

95.500

95.700

96.300

103.000

105.000

112.600

117.500

120.800

-.0267

-.0221

-.0293

.0480

-.0077

-.0092

TABULATED SOURCE DATA - 1H4

UFWT 1059 (1H4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCC)

MACH (3) = 4.600 ALPHA (4) = 10.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8001	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--------	--------

PHI

127,900

129.500

130.000

135.000

139.600

144.000

155.000

180,000

X/LB	1.0250	1.0500
------	--------	--------

PHI

7114
1.000

MACH (3) = 4.600 ALPHA (5) = 20.000 PINF = .27610 Q(PSI) = 4.0900 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

PHI

111.000

10.000

20.000

24.500

24.500
39.000

39.000
163.000

163.000
174.000174.000
180.000

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	--------	--------

PHI

111.000

23.000

24.000

24.000
31.500

33.100

35.100
35.000

40.000

45.000

45.000
50.00050.000
51.60051.600
57.00057.000
60.900

60.900

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(RQ3BCC)

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) O1 ALONE

ORB. UPPER WING

(R03UCC) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
LREF = 1290.3000 INCHES YMRP = .0000 INCHES
BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
SCALE = .0100

RN/L = 5.000 BETA = .000

MACH (1) = 2.950 ALPHA (1) = .000 PINF = 1.0998 Q(P51) = 6.6993 RN/L = 5.0025 CPSTG = 1.7529

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050 .1104
.200 -.0103 .0124 .0718
.600 -.0609 -.0628
.800 -.0676
.900 .0500 -.0504
.950 -.0594

MACH (1) = 2.950 ALPHA (2) = 5.700 PINF = 1.0998 Q(P51) = 6.6993 RN/L = 5.0025 CPSTG = 1.7529

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050 .0689
.200 -.0342 -.0151 .0302
.600 -.0720 -.0726
.800 -.0759
.900 .0544 -.0595
.950 -.0625

MACH (1) = 2.950 ALPHA (3) = 10.000 PINF = 1.0998 Q(P51) = 6.6993 RN/L = 5.0025 CPSTG = 1.7529

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050 -.0099
.200 -.0589 -.0454 .0002
.600 -.0789 -.0773
.800 -.0774
.900 .0594 -.0707
.950 -.0648

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

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UPWT 1059 (1H4) 01 AL(NE

ORB. UPPER WING

(RQ3UCC)

MACH (1) = 2.950 ALPHA (4) = 20.000 PINF = 1.0998 Q(PSI) = 5.6993 RN/L = 5.0025 CPSTG = 1.7529

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	-.0732		
.200	-.0799	.0587	.0232
.600	-.0800	-.0690	
.800		-.0423	
.900		-.0740	-.0720
.950		.3207	

MACH (2) = 3.700 ALPHA (1) = -5.000 PINF = .54768 Q(PSI) = 5.2486 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1299		
.200	.0237	.0536	.1315
.600	-.0284	-.0274	
.800		-.0330	
.900		.0409	-.0133
.950		-.0240	

MACH (2) = 3.700 ALPHA (2) = .000 PINF = .54768 Q(PSI) = 5.2486 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1041		
.200	.0025	.0299	.0878
.600	-.0404	-.0366	
.800		-.0404	
.900		.0404	-.0226
.950		-.0338	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. UPPER WING

(RQ3UCC)

MACH (2) = 3.700 ALPHA (3) = 5.000 PINF = .54768 Q(PSI) = 5.2486 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0624		
.200	-.0213	-.0020	.0455
.600	-.0459	-.0452	
.800		-.0454	
.900		.0404	-.0349
.950		-.0391	

MACH (2) = 3.700 ALPHA (4) = 10.000 PINF = .54768 Q(PSI) = 5.2486 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0030		
.200	-.0409	-.0178	.0218
.600	-.0495	-.0485	
.800		-.0487	
.900		.0426	-.0384
.950		-.0416	

MACH (2) = 3.700 ALPHA (5) = 20.000 PINF = .54768 Q(PSI) = 5.2486 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	-.0364		
.200	-.0481	-.0403	-.0126
.600	-.0516	-.0502	
.800		-.0501	
.900		.0439	-.0453
.950		-.0418	

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DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. UPPER WING

(RQ3UCC)

MACH (3) = 4.600 ALPHA (1) = -5.000 PINF = .27610 Q(PSI) = 4.0900 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1192		
.200	.0249	.0629	.1507
.600	-.0212	-.0140	
.800		-.0203	
.900		.0386	.0053
.950		-.0138	

MACH (3) = 4.600 ALPHA (2) = .000 PINF = .27610 Q(PSI) = 4.0900 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0984		
.200	.0058	.0349	.0941
.600	-.0260	-.0218	
.800		-.0247	
.900		.0391	-.0101
.950		-.0177	

MACH (3) = 4.600 ALPHA (3) = 5.000 PINF = .27610 Q(PSI) = 4.0900 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0612		
.200	-.0125	.0109	.0582
.600	-.0279	-.0261	
.800		-.0263	
.900		.0400	-.0155
.950		-.0200	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) O1 ALONE ORB. UPPER WING (RQ3UCC)
 MACH (3) = 4.600 ALPHA (4) = 10.000 PINF = .27610 Q(PSI) = 4.0900 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0101		
.200	-.0254	-.0027	.0323
.600	-.0308	-.0288	
.800		-.0285	
.900		.0406	-.0183
.950		-.0214	

MACH (3) = 4.600 ALPHA (5) = 20.000 PINF = .27610 Q(PSI) = 4.0900 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	-.0197		
.200	-.0279	-.0193	-.0045
.600	-.0304	-.0287	
.800		-.0282	
.900		.0412	-.0202
.950		-.0208	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCC) (15 APR 76)

REFERENCE DATA

SREF = 2593.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 5.000 BETA = .000

MACH (1) = 2.950 ALPHA (1) = .000 PINF = 1.0993 Q(PS1) = 6.6993 RN/L = 5.0025 CPSTG = 1.7529

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CH										
.000						.3187		.3807		-.0156
.001		.0021	.0014		.2296	.0562	.3286	.0592		
.002						.0196		.0449		
.003						.4524		.4123		
.004						.1018		.0999		
.005						.0335		.0450		
.025				.0251	.0301		.0577			
.045				.0267						
.100						.0201		.0469	.0551	
.153	-.0026									
.177					.0004					
.200				-.0053						
.299	.0065									
.302				.0005			.0383			
.428						.0183				
.444	.0067									
.487					.0167					
.559				.0213						
.600						.0107				
.700						-.0071				
.736	.0144									
.800						-.0210				
.850						-.0295				
.900				-.0339		-.0373	-.0352		-.0262	

MACH (1) = 2.950 ALPHA (2) = 5.000 PINF = 1.0998 Q(PS1) = 6.6993 RN/L = 5.0025 CPSTG = 1.7529

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CH										
.000						.3931		.3946		-.0484
.001		.0269	.0255		.3053	.1374	.3921	.1298		
.002						.0915		.1100		
.003						.4253		.3501		
.004						.1944		.1801		
.005						.1091		.1139		

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TABULATED SOURCE DATA - IH4

PAGE 323

UPWT 1059 (IH4) O1 ALONE

ORB. LOWER WING

(RQ3LCC)

MACH (1) = 2.950 ALPHA (2) = 5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.025				.0990	.1221		.1352			
.045				.1001						
.100						.0844		.1182	.1167	
.153	.0300									
.177					.0627					
.200				.0420						
.299	.0282									
.302				.0440			.1016			
.428						.0807				
.444	.0298									
.487					.0710					
.559				.0622						
.600						.0637				
.700						.0387				
.736	.0439									
.800						.0161				
.850						.0025				
.900				-.0102		-.0109	-.0004		.0036	

MACH (1) = 2.950 ALPHA (3) = 10.000 PINF = 1.0998 Q(PSI) = 6.8993 RN/L = 5.0025 CPSTG = 1.7529

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.4625		.3982		-.0666
.001		.0368	.0126		.3628	.2169	.4606	.2195		
.002						.1619		.2016		
.003						.3811		.3012		
.004						.2947		.2732		
.005						.1876		.2059		
.025				.1264	.1987		.2184			
.045				.1340						
.100						.1552		.2071	.1828	
.153	.0586									
.177					.1266					
.200				.0864						
.299	.0554									
.302				.0895			.1824			
.428						.1447				
.444	.0581									
.487					.1303					
.559				.1074						
.600						.1242				

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TABULATED SOURCE DATA - IH4

PAGE 324

UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCC)

MACH (1) = 2.950 ALPHA (3) = 10.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.700						.0916				
.736	.0807									
.800						.0602				
.850						.0412				
.900				.0223		.0225	.0427		.0407	

MACH (1) = 2.950

ALPHA (4) = 20.000

PINF = 1.0998

Q(PS1) = 6.6993

RN/L = 5.0025

CPSTG = 1.7529

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.5539		.3792		-.0649
.001		.0660	.0282		.4215	.3924	.5516	.1771		
.002						.3112		.5017		
.003						.3091		-.0527		
.004						.4860		-.0717		
.005						.3547		-.0819		
.025				.1968	.3209		.4276			
.045				.2236						
.100						.3513		.4353	.2890	
.153	.1436									
.177					.2775					
.200				.2044						
.299	.1584									
.302				.2134			.3710			
.428						.3032				
.444	.1688									
.487					.2835					
.559				.2428						
.600						.2789				
.700						.2262				
.736	.1991									
.800						.1739				
.850						.1461				
.900				.1134		.1139	.1476		.1319	

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCC)

MACH (2) = 3.700 ALPHA (1) = -5.000 PINF = .51768 Q(PS1) = 5.2486 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.2653		.3790		-.0026
.001		-.0374	-.0379		.1671	.0260	.2890	.0312		
.002						-.0038		.0121		
.003						.4532		.4892		
.004						.0670		.0635		
.005						.0089		.0174		
.025				-.0353	-.0035		.0244			
.045				-.0354						
.100								.0183	.0282	
.153	-.0288									
.200					-.0332					
.299	-.0321			-.0372						
.302				-.0364			.0031			
.428						-.0202				
.444	-.0280									
.487					-.0316					
.559				-.0281						
.600						-.0277				
.700						-.0342				
.736	-.0141									
.800						-.0401				
.850						-.0431				
.900				-.0374		-.0446	-.0390		-.0253	

MACH (2) = 3.700 ALPHA (2) = .000 PINF = .54768 Q(PS1) = 5.2486 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.3139		.4063		.0012
.001		.0005	.0014		.2340	.0683	.3460	.0768		
.002						.0285		.0544		
.003						.4426		.4450		
.004						.1149		.1278		
.005						.0426		.0576		
.025				.0221	.0400		.0670			
.045				.0223						
.100						.0295		.0580	.0718	
.153	-.0033									
.177					.0028					
.200				-.0066						
.299	-.0020									

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TABULATED SOURCE DATA - IH4

PAGE 326

UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCC)

MACH (2) = 3.700 ALPHA (2) = .000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.302

.428

.444

.487

.559

.600

.700

.736

.800

.850

.900

-.0039

.0061

.0037

.0144

.0380

.0071

-.0067

-.0167

-.0228

-.0279

-.0227

-.0144

MACH (2) = 3.700 ALPHA (3) = 5.000 PINF = .54768 Q(PSI) = 5.2486 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000

.001

.002

.003

.004

.005

.025

.045

.100

.153

.177

.200

.299

.302

.428

.444

.487

.559

.600

.700

.736

.800

.850

.900

.0257

.0235

.3083

.3976

.1455

.0978

.4362

.1931

.1172

.0971

.0965

.1308

.0796

.0551

.0341

.0358

.0684

.0588

.0553

.0326

.0150

.0047

-.0045

.0054

.4103

.1385

.1091

.3927

.2012

.1150

.1180

.1279

.1281

.0912

.0054

.0124

.0124

.0124

.0124

.0124

.0124

.0124

.0124

.0124

.0124

.0124

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TABULATED SOURCE DATA - IH4

PAGE 327

ORB. LOWER WING

(RQ3LCC)

MACH (2) = 3.700 ALPHA (4) = 10.000 PINF = .54738 Q(PSI) = 5.2486 RN/L = 4.9900 CPSTG = 1.7839

DEPENDENT VARIABLE C²/CPS

2Y/8W	.2500	.3011	.3480	.4000	.5000	.6000	.7510	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

0.000							
.001	.0319	.0150		.3795	.4843	.4778	.4355
.002					.2237		.2178
.003					.7642		.1854
.004					.4262		.3349
.005					.2912		.2859
.025			.1317	.2074	.1891	.2173	.1929
.045			.1376				
.100					.1475		.2049
.153	.0573						.1729
.177				.1102			
.200			.0756				
.299	.0528						
.302			.0767			.1631	
.428					.1317		
.444	.0564						
.487				.1135			
.559			.0899				
.600					.1106		
.700					.0805		
.736	.0659						
.800					.0532		
.850					.0377		
.900			.0202		.0230	.0415	.0451

MACH (2) = 3.700 ALPHA (5) = 20.000 PINF = .54778 Q(PS1) = 5.2486 RN/L = 4.9900 CPSTG = 1.7839

DEPENDENT VARIABLE CF /CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

.000				.6320		.3364		
.001	.0620	.0350		.4700	.4359	.6484	.4005	-.0354
.002					.3441		.3642	
.003					.3910		.1820	
.004					.5126		.4347	
.005					.3936		.3736	
.025			.2216	.3596		.4650		
.045			.2442					
.100					.3268		.4052	.2892
.153	.1543							
.177				.2523				
.200			.1940					
.299	.1493							

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) OI ALONE

ORB. LOWER WING

(RQ3LCC)

MACH (2) = 3.700 ALPHA (5) = 20.000

SECTION (1) ORB. LOWER WING		DEPENDENT VARIABLE CP/CPS									
2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980	
X/CW											
.302				.2005			.3367				
.428						.3035					
.444	.1593										
.487					.2707						
.559				.2174							
.600						.2716					
.700						.2195					
.736	.1832										
.800						.1694					
.850						.1409					
.900				.1074		.1126	.1280		.1278		

MACH (3) = 4.600 ALPHA (1) = -5.000 PINF = .27610 Q(PSI) = 4.0900 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING		DEPENDENT VARIABLE CP/CPS									
2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980	
X/CW											
.000						.2856		.4476		.0082	
.001		-.0206	-.0235		.1974	.0392	.3418	.0587			
.002						.0114		.0341			
.003						.4924		.5615			
.004						.0906		.0904			
.005						.0205		.0411			
.025				-.0176	.0171		.0417				
.045				-.0190							
.100						.0122		.0367	.0465		
.153	-.0155										
.177					-.0168						
.200				-.0189							
.299	-.0187										
.302				-.0217			.0122				
.428						-.0054					
.444	-.0187										
.487					-.0207						
.559				-.0202							
.600						-.0120					
.700						-.0199					
.736	-.0166										
.800						-.0245					
.850						-.0269					
.900				-.0264		-.0283	-.0237		-.0141		

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCC)

MACH (3) = 4.600 ALPHA (2) = .000 PINF = .27610 Q(PSI) = 4.0900 RN/L * 5.0000 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.3443		.4492		.0110
.001		.0082	.0086		.2631	.0881	.3927	.0982		
.002						.0447		.0681		
.003						.4714		.4931		
.004						.1368		.1681		
.005						.0633		.0742		
.025				.0332	.0633		.0846			
.045				.0323						
.100						.0393		.0800	.0834	
.153	.0043									
.177					.0103					
.200				-.0005						
.299	-.0002									
.302				-.0010			.0432			
.428						.0197				
.444	.0004									
.487					.0107					
.559				.0053						
.600						.0113				
.700						-.0003				
.736	.0034									
.800						-.0099				
.850						-.0154				
.900				-.0198		-.0192	-.0131		-.0024	

MACH (3) = 4.600 ALPHA (3) = 5.000 PINF = .27610 Q(PSI) = 4.0900 RN/L = 5.0000 CPSTG * 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.4364		.4582		-.0126
.001		.0260	.0233		.3365	.1560	.4573	.1590		
.002						.0952		.1224		
.003						.4772		.4233		
.004						.2113		.2174		
.005						.1218		.1276		
.025				.0860	.1378		.1549			
.045				.0856						
.100						.0866		.1226	.1172	
.153	.0283									
.177					.0535					
.200				.0334						
.299	.0203									

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCC)

MACH (3) = 4.600 ALPHA (3) = 5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.302				.0338			.0945			
.428						.0691				
.444	.0204									
.487					.0578					
.559				.0421						
.600						.0558				
.700						.0349				
.736	.0256									
.800						.0190				
.850						.0099				
.900				-.0020		.0021	.0118		.0179	

MACH (3) = 4.600 ALPHA (4) = 10.000 PINF = .27610 Q(P51) = 4.0900 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.5431		.3823		-.0164
.001		.0364	.0227		.4240	.2458	.5399	.2054		
.002						.1810		.1732		
.003						.4869		.2715		
.004						.3152		.2760		
.005						.2084		.1811		
.025				.1323	.2184		.2426			
.045				.1384						
.100						.1547		.1928	.1675	
.153	.0575									
.177					.1103					
.200				.0753						
.299	.0542									
.302				.0751			.1492			
.428						.1354				
.444	.0558									
.487					.1151					
.559				.0846						
.600						.1144				
.700						.0836				
.736	.0623									
.800						.0565				
.850						.0418				
.900				.0233		.0288	.0430		.0528	

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) O1 ALONE

ORB. LOWER WING

(RQ3LCC)

MACH (3) = 4.600

ALPHA (5) = 20.000

PINF = .27610

Q(PSI) = 4.0900

RN/L = 5.0000

CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.7287		.3534		-.0134
.001		.0809	.0541		.5642	.4541	.4855	.4075		
.002						.3603		.3635		
.003						.4735		.1578		
.004						.5667		.4598		
.005						.4057		.3754		
.025				.2326	.3814		.3897			
.045				.2537						
.100						.3446		.3757	.2828	
.153	.1559									
.177					.2616					
.200				.2015						
.299	.1552									
.302				.2044		.3223				
.428						.3260				
.444	.1649									
.487					.2783					
.559				.2222						
.600						.2728				
.700						.2130				
.736	.1829									
.800						.1622				
.850						.1331				
.900				.1079		.1062	.1220		.1367	

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) OI ALONE

ORB. VERT. TAIL

(RQ3VCC) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 5.000 BETA = .000

MACH (1) = 2.950 ALPHA (1) = .000 PINF = 1.0998 Q(PSI) = 6.6993 RN/L = 5.0025 CPSTG = 1.7529

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3944 .3772 .2878 .3915
 .300 .1358 .0838 .0393
 .500 .1014
 .700 -.0051
 .900 -.0336 -.0167 -.0112

MACH (1) = 2.950 ALPHA (2) = 5.000 PINF = 1.0998 Q(PSI) = 6.6993 RN/L = 5.0025 CPSTG = 1.7529

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3440 .3340 .2298 .3043
 .300 .1039 .0784 .0379
 .500 .0802
 .700 -.0210
 .900 -.0425 -.0314 -.0193

MACH (1) = 2.950 ALPHA (3) = 10.000 PINF = 1.0998 Q(PSI) = 6.6993 RN/L = 5.0025 CPSTG = 1.7529

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3050 .2681 .1945 .2489
 .300 .0785 .0698 .0359
 .500 .0581
 .700 -.0302
 .900 -.0509 -.0393 -.0291

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 0: ALONE

ORB. VERT. TAIL

(RQ3VCC)

MACH (1) = 2.950 ALPHA (4) = 20.000 PINF = 1.0938 Q(PS1) = 6.6993 RN/L = 5.0025 CPSTG = 1.7529

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.1976	-.0474	.1457	.0575
.300	.0468	-.0575	.0587	
.500		.1182		
.700		.0329		
.900	.0253	-.0415	.0587	

MACH (2) = 3.700 ALPHA (1) = -5.000 PINF = .54768 Q(PS1) = 5.2486 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3770	.4906	.3907	.5315
.300	.1023	.0496	.0510	
.500		.0701		
.700		.0115		
.900	-.0045	.0032	-.0167	

MACH (2) = 3.700 ALPHA (2) = .000 PINF = .54768 Q(PS1) = 5.2486 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3637	.3475	.2974	.3927
.300	.0557	.0328	.0263	
.500		.0558		
.700		.0046		
.900	-.0189	-.0037	-.0213	

MACH (2) = 3.700 ALPHA (3) = 5.000 PINF = .54768 Q(PS1) = 5.2486 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CF/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3252	.3012	.2170	.2848
.300	.0681	.0257	.0172	
.500		.0407		
.700		-.0052		
.900	-.0240	-.0129	-.0194	

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) OI ALONE

ORB. VERT. TAIL

(RQ3VCC)

MACH (2) = 3.700 ALPHA (4) = 10.000 PINF = .54763 Q(PSI) = 5.2486 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .2686 .2385 .1982 .2423

.300 .0612 .0238 .0160

.500 .0322

.700 -.0146

.900 -.0320 -.0217 -.0225

MACH (2) = 3.700 ALPHA (5) = 20.000 PINF = .54763 Q(PSI) = 5.2486 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .2265 .1563 .1062 .1321

.300 -.0017 .0277 .0142

.500 .0220

.700 -.0332

.900 -.0467 -.0399 -.0255

MACH (3) = 4.600 ALPHA (1) = -5.000 PINF = .27610 Q(PSI) = 4.0900 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3101 .4811 .4193 .5575

.300 .0556 .0435 .0491

.500 .0496

.700 .0064

.900 .0032 .0043 -.0081

MACH (3) = 4.600 ALPHA (2) = .000 PINF = .27610 Q(PSI) = 4.0900 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3154 .2881 .2904 .3909

.300 .0354 .0233 .0239

.500 .0287

.700 .0009

.900 -.0093 -.0016 -.0144

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TABULATED SOURCE DATA - IH4

PAGE 335

UPWT 1059 (IH4) 01 ALONE

ORB. VERT. TAIL

(RQ3VCC)

MACH (3) = 4.600 ALPHA (3) = 5.000 PINF = .27610 Q(PSI) = 4.0900 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/OPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.2923	.2509	.1826	.2615
.300	.0332	.0150	.0089	
.500		.0172		
.700		-.0095		
.900	-.0150	-.0119	-.0170	

MACH (3) = 4.600 ALPHA (4) = 10.000 PINF = .27610 Q(PSI) = 4.0900 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/OPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.2238	.2175	.1745	.2120
.300	.0234	.0115	.0132	
.500		.0120		
.700		-.0145		
.900	-.0223	-.0184	-.0194	

MACH (3) = 4.600 ALPHA (5) = 20.000 PINF = .27610 Q(PSI) = 4.0900 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/OPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.1245	.1326	.0663	.0929
.300	-.0110	.0121	.0029	
.500		.0015		
.700		-.0249		
.900	-.0288	-.0279	-.0197	

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCD) (15 APR 76)

REFERENCE DATA

```

SREF = 2690.0000 SQ.FT.   XMRP = .0000 INCHES
LREF = 1290.3000 INCHES   YMRP = .0000 INCHES
BREF = 1290.3000 INCHES   ZMRP = .0000 INCHES
SCALE = .0100

```

PARAMETRIC DATA

RN/L = 3.000 BETA = -5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9703	.4078	.1287	.0610		.0318	.0146	.0042		-.0070					
10.000								.0031							
20.000								.0054							
24.500								.0115							
39.000								.0912							
163.000														.5440	
174.000												.8654			
180.000	.9703				.2963			.2386	.2335	.2675	.7218		.8069		.7526
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	-.0111	-.0131	-.0104	-.0119	-.0137		-.0103				-.0278		-.0307	-.0313	
23.000		-.0203													
24.000	-.0125														
31.500	-.0105														
33.100		-.0224													
35.000	-.0149														
40.000	-.0117	-.0302													
45.000		-.0293													
50.000	.0548														
51.600															
57.000		.0241											.0554		
60.900		.0237													
65.000		.0233													
68.000													.0269		
69.000		.0179													
79.300					.0271										
95.500					.0287		.0209								
95.700		.0219													
96.300	.0872														
103.000					.0282										
105.000															-.0377
112.600					.0273										
117.500												.0412		.0506	
120.800									.1532						
127.900						.2591									
129.500								.2743							

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCD)

MACH (1) = 3.700 ALPHA (1) = -5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
130.000									.2021	.0677		.0356			
135.000		.0026													
139.600									.1724						
144.000												.0425			
155.000	.2520														
180.000	.1478	-.0030			.0065										
X/LB	1.0250	1.0500													
PHI															
.000	-.0322	-.0327													

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32910 Q(PS1) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9777	.4950	.1795	.0977		.0610	.0379	.0260		.0088					
10.000								.0257							
20.000								.0306							
24.500								.0384							
39.000								.1049							
163.000														.4475	
174.000												.7110			
180.000	.9777				.2215		.1693	.1660	.1932	.5614			.6511		.6116
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0013	-.0016	.0003	.0000	-.0013		.0028				-.0151		-.0181	-.0192	
23.000		-.0031													
24.000	.0080														
31.500	.0144														
33.100		-.0007													
35.000	.0146														
40.000	.0213	-.0019													
45.000		.0010													
50.000	.0620														
51.600													.0188		
57.000		.0221													
60.900		.0205													
65.000		.0200													
68.000													.0120		

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCD)

MACH (1) = 3.700 ALPHA (2) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
69.000		.0153													
79.300					.0146										
95.500					.0140		.0036								
95.700		.0144													
96.300	.0918														
103.000					.0121										
105.000															
112.600					.0047										
117.500															
120.800									.1459			.0400		.0360	
127.900						.1833									
129.500							.2208								
130.000									.1616	.0536		.0184			
135.000		-.0142			-.0058										
139.600									.1171						
144.000											.0153				
155.000	.2077														
160.000	.1055	-.0106			-.0113										

X/LB 1.0250 1.0500

PHI

.000 -.0199 -.0206

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .16610 Q(PSI) = 2.4595 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0600	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9919	.4143	.1341	.0661		.0389	.0220	.0106		.0000					
10.000								.0092							
20.000								.0121							
24.500								.0191							
39.000								.0965							
163.000														.5698	
174.000											.9222		.8774		.8378
180.000	.9919				.2925			.2350	.2309	.2668	.7313				

X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI

.000 -.0040 -.0073 -.0108 -.0094 -.0132 -.0044 -.0193 -.0212 -.0212

23.000

TABULATED SOURCE DATA - IN4

UPWT 1059 (1H4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCD)

MACH (2) = 4.600 ALPHA (1) = -5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCD)

MACH (2) = 4.600 ALPHA (2) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB 1.0250 1.0500

PHI
.000 -.0185 -.0193

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) OI ALONE

ORB. UPPER WING

(RQ3UCD) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 BETA = -5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0836		
.200	.0065	.0227	.0817
.600	-.0324	-.0356	
.800		-.0361	
.900		.0360	-.0214
.950		-.0267	

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0573		
.200	-.0154	-.0008	.0474
.600	-.0425	-.0429	
.800		-.0409	
.900		.0343	-.0273
.950		-.0326	

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .16610 Q(PSI) = 2.4595 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0684		
.200	.0076	.0257	.0938
.600	-.0255	-.0234	
.800		-.0230	
.900		.0330	-.0047
.950		-.0103	

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UPWT 1059 (IH4) 01 ALONE

ORB. UPPER WING

(RQ3UCD)

MACH (2) = 4.600 ALPHA (2) = .000 PINF = .16610 Q(PSI) = 2.4595 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CFS

2Y/BW .4000 .6000 .8000

X/CW

.050	.0477		
.200	-.0077	.0101	.0523
.600	-.0236	-.0215	
.800		-.0200	
.900		.0372	-.0064
.950		-.0113	

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TABULATED SOURCE DATA - 1H4

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UPWT 1059 (1H4) 01 ALONE

ORB. LOWER WING

(RQ3LCD) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 3.000 BETA = -5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32910 Q(P51) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.3559		.5043		.0181
.001		-.0229	-.0310		.2439	.0522	.3945	.0648		
.002						.0172		.0402		
.003						.5950		.6332		
.004						.1100		.0987		
.005						.0314		.0465		
.025				-.0232	.0178		.0531			
.045				-.0250						
.100						.0190		.0441	.0461	
.153	-.0279									
.177					-.0200					
.200				-.0376						
.299	-.0284									
.302				-.0334			.0240			
.428						-.0039				
.444	-.0284									
.487					-.0217					
.559				-.0303						
.600						-.0142				
.700						-.0255				
.736	-.0307									
.800						-.0327				
.850						-.0376				
.900				-.0381		-.0407	-.0317		-.0144	

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32910 Q(P51) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.4137		.5402		.0164
.001		.0155	.0144		.3172	.0997	.4689	.1179		
.002						.0512		.0871		
.003						.5730		.5854		
.004						.1835		.1858		
.005						.0715		.0925		

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) O1 ALONE

ORB. LOWER WING

(RQ3LCD)

MACH (1) = 3.700 ALPHA (2) = .000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE C_p/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.025				.0350	.0660		.0979			
.045				.0338						
.100						.0537		.0913	.0939	
.153	-.0002									
.177					.0187					
.200				-.0054						
.299	-.0036									
.302				-.0044			.0643			
.428						.0327				
.444	-.0039									
.487					.0133					
.559				.0042						
.600						.0173				
.700						.0031				
.736	-.0003									
.800						-.0095				
.850						-.0172				
.900				-.0285		-.0233	-.0129		-.0002	

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .166 0 Q(PS1) = 2.4595 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE C_p/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.4039		.3970		.0198
.001		-.0077	-.0125		.2850		.4762	.0629		
.002						.0330		.0381		
.003						.6863		.5189		
.004						.1329		.0998		
.005						.0492		.0495		
.025				-.0048	.0411		.0734			
.045				-.0066						
.100						.0363		.0576	.0514	
.153	-.0136									
.177					-.0042					
.200				-.0246						
.299	-.0200									
.302				-.0240			.0301			
.428						.0081				
.444	-.0212									
.487					-.0121					
.559				-.0219						
.600						-.0033				

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCD)

MACH (2) = 4.600 ALPHA (1) = -5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.700

-.0115

.736

-.0214

.800

-.0178

.850

-.0207

.900

-.0233

-.0230

-.0171

-.0022

MACH (2) = 4.600 ALPHA (2) = .000 PINF = .16610 Q(PSI) = 2.4595 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000

.4843

.4554

.0097

.001

.0260

.0264

.3559

.1304

.3962

.1076

.002

.0816

.0875

.003

.6656

.4739

.004

.1972

.1670

.005

.1023

.0861

.025

.0540

.1023

.1044

.045

.0516

.100

.0675

.0922

.0922

.153

.0101

.177

.0271

.200

.0031

.299

.0001

.302

.0022

.0647

.428

.0400

.444

-.0017

.487

.0204

.559

.0061

.600

.0263

.700

.0079

.736

-.0004

.800

-.0056

.850

-.0121

.900

-.0213

-.0162

-.0080

.0049

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. VERT. TAIL

(RQ3VCD) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 3.000 BETA = -5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3863 .5016 .4527 .5267
 .300 .1922 .1318 .0975
 .500 .1568
 .700 .0416
 .900 .0149 .0261 .0232

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32910 Q(PSI) = 3.1538 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3558 .3640 .3485 .3922
 .300 .1510 .1101 .0788
 .500 .1302
 .700 .0316
 .900 .0000 .0195 .0189

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .16610 Q(PSI) = 2.4595 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3312 .4855 .4705 .5609
 .300 .1386 .1001 .0868
 .500 .1082
 .700 .0396
 .900 .0179 .0281 .0112

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 348

UPWT 1059 (IH4) 01 ALONE

ORB. VERT. TAIL

(RQ3VCD)

MACH (2) = 4.600 ALPHA (2) = .000 PINF = .16610 Q(PSI) = 2.4595 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000 .3231 .3173 .3281 .3893

.300 .0912 .0705 .0574

.500 .0791

.700 .0291

.900 .0027 .0195 .0037

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 349

UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCE) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 3.000 BETA = 5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32905 Q(PSI) = 3.1531 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9615	.3890	.1254	.0606		.0320	.0227	.0111		-.0018					
10.000								.0085							
20.000								.0069							
24.500								.0063							
39.000								.0356							
163.000														.3633	
174.000															
180.000	.9615				.2918			.2357	.2308	.2553	.6694	.7138	.7769		.7341
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	-.0069	-.0089	-.0113	-.0059	-.0068		-.0092				-.0275		-.0301	-.0309	
23.000		-.0069													
24.000	-.0047														
31.500	-.0034														
33.100		-.0118													
35.000	-.0057														
40.000	-.0079	-.0179													
45.000		-.0211													
50.000	.0082														
51.600															
57.000		-.0141											.0092		
60.900		-.0187													
65.000		-.0222													
68.000														-.0007	
69.000		-.0255													
79.300						-.0122									
95.500						-.0170	-.0122								
95.700		-.0319													
96.300	.0016														
103.000						-.0174									
105.000															-.0415
112.600						-.0184									
117.500															
120.800									.0129			-.0226		-.0233	
127.900															
129.500						.1149			.1269						

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 350

UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCE)

MACH (1) = 3.700 ALPHA (1) = -5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPU

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
130.000									.0806	.0082		-.0274			
135.000		-.0191				-.0148									
139.600								.1403							
144.000												.0020			
155.000	.1438														
180.000	.1482	-.0030			.0056										
X/LB	1.0250	1.0500													
PHI															
.000	-.0315	-.0323													

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32905 Q(P51) = 3.1531 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	.1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9726	.4762	.1758	.0979		.0613	.0420	.0285		.0110					
10.000								.0243							
20.000								.0227							
24.500								.0209							
39.000								.0339							
163.000														.2838	
174.000															
180.000	.9726				.2176		.1660	.1620	.1816	.5171	.5648	.6193		.5925	
X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
.000	.0029	-.0007	.0000	-.0001	-.0005		.0013				-.0165		-.0195	-.0207	
23.000		.0005													
24.000	.0035														
31.500	.0059														
33.100		.0002													
35.000	.0059														
40.000	.0074	-.0007													
45.000		-.0019													
50.000	.0122														
51.600													-.0134		
57.000		-.0156													
60.900		-.0182													
65.000		-.0201													
68.000													-.0213		

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 351

UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCE)

MACH (1) = 3.700 ALPHA (2) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.2000	.3000	.4000	.5000	.6000	.7800	.8000	.8050	.8290	.8620	.9500	.9630	.9750	1.0000	1.0145
PHI															
69.000		-.0232													
79.300						-.0179									
95.500						-.0174	-.0158								
95.700		-.0262													
96.300	.0057														
103.000						-.0214									
105.000															-.0440
112.600						-.0219									
117.500															
120.800									.0253						
127.900						.0461									
129.500								1251							
130.000									.0857	.0112		-.0170			
135.000		-.0303				-.0225									
139.600									.1283						
144.000												-.0005			
155.000	.1059														
180.000	.1055	-.0084				-.0100									

X/LB 1.0250 1.0500

PHI

.000 -.0210 -.0219

MACH (2) = 4.500 ALPHA (1) = -5.000 PINF = .16595 Q(PSI) = 2.4581 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/CPS

X/LB	.0000	.0050	.0200	.0400	.0500	.0600	.0800	1000	.1250	.1500	.1600	.1650	.1700	.1750	.1800
PHI															
.000	.9839	.3990	.1303	.0656		.0372	.0232	0112		.0002					
10.000								0085							
20.000								0078							
24.500								0066							
39.000								0296							
163.000														.3723	
174.000															
180.000	.9839				.2877			2308	.2260	.2534	.6824	.7414	.8339		.8104

X/LB .2000 .3000 .4000 .5000 .6000 .7800 .8000 .8050 .8290 .8620 .9500 .9630 .9750 1.0000 1.0145

PHI

.000 -.0047 -.0077 -.0088 -.0079 -.0127 -.0059 -.0200 -.0216 -.0217
23.000ORIGINAL PAGE IS
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DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCE)

MACH (2) = 4.600 ALPHA (1) = -5.000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CF/CPS

[illegible]

TABULATED SOURCE DATA - IH4

UPWT 1059 (144) 01 ALONE

ORBITER FUSELAGE

(RQ3BCE)

MACH (2) = 4.600 ALPHA (2) = .000 PINF = .16595 Q(P51) = 2.4581 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP, CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORBITER FUSELAGE

(RQ3BCE)

MACH (2) = 4.600 ALPHA (2) = .000

SECTION (1) ORBITER FUSELAGE

DEPENDENT VARIABLE CP/100PS

X/LB 1.0250 1.0500

PHI
.000 -.0189 -.0198

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. UPPER WING

(RQ3UCE) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 3.000 BETA = 5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32905 Q(PSI) = 3.1531 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.2009		
.200	.0523	.0882	.1860
.600	-.0206	-.0170	
.800		-.0239	
.900		.0525	.0035
.950		-.0161	

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32905 Q(PSI) = 3.1531 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1647		
.200	.0281	.0612	.1309
.600	-.0302	-.0230	
.800		-.0305	
.900		.0558	-.0094
.950		-.0214	

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .16595 Q(PSI) = 2.4581 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1955		
.200	.0583	.1033	.1757
.600	-.0153	-.0017	
.800		-.0109	
.900		.0464	.0147
.950		-.0018	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 356

UPWT 1059 (IH4) 01 ALONE

ORB. UPPER WING

(RQ3UCE)

MACH (2) = 4.600

ALPHA (2) =

.000 PINF = .16595

Q(PSI) = 2.4581

RN/L = 3.0100

CPSTG = 1.8033

SECTION (1) ORB. UPPER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW .4000 .6000 .8000

X/CW

.050	.1591		
.200	.0263	.0669	.1164
.600	-.0200	-.0137	
.800		-.0178	
.900		.0494	.0027
.950		-.0068	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCE) (15 APR 76)

REFERENCE DATA

PARAMETRIC DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

RN/L = 3.000 BETA = 5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32905 Q(PSI) = 3.1531 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.2027		.2744		-.0140
.001		-.0250	-.0231		.1116	.0175	.2079	.0141		
.002						-.0092		-.0021		
.003						.3475		.3642		
.004						.0516		.0433		
.005						.0014		.0007		
.025				-.0195	-.0069		.0095			
.045				-.0173						
.100						-.0101		.0050	.0121	
.153	-.0218									
.177					-.0275					
.200				-.0240						
.299	-.0172									
.302				-.0228		-.0090				
.428						-.0228				
.444	-.0086									
.487					-.0168					
.559				-.0147						
.600						-.0235				
.700						-.0289				
.736	-.0070									
.800						-.0332				
.850						-.0359				
.900				-.0340		-.0377	-.0378	-.0353		

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32905 Q(PSI) = 3.1531 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
X/CW										
.000						.2662		.2969		-.0155
.001		-.0022	-.0001		.1933	.0574	.2589	.0511		
.002						.0246		.0331		
.003						.3530		.3372		
.004						.1020		.0905		
.005						.0375		.0362		

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DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 358

UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCE)

MACH (1) = 3.700 ALPHA (2) = .000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.025				.0300	.0426		.0453			
.045				.0312						
.100						.0216		.0390	.0441	
.153	.0005									
.177					.0028					
.200				.0013						
.299	-.0016									
.302				.0045			.0244			
.428						.0124				
.444	.0019									
.487					.0149					
.559				.0119						
.600						.0082				
.700						-.0037				
.736	.0060									
.800						-.0143				
.850						-.0209				
.900				-.0210		-.0261	-.0245		-.0235	

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .16595 Q(PSI) = 2.4581 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000						.2106		.3100		-.0054
.001		-.0160	-.0171		.1167	.0191	.2357	.0277		
.002						-.0005		.0094		
.003						.3555		.4148		
.004						.0589		.0571		
.005						.0070		.0145		
.025				-.0163	.0025		.0198			
.045				-.0156						
.100						.0012		.0142	.0202	
.153	-.0137									
.177					-.0185					
.200				-.0173						
.299	-.0165									
.302				-.0169			-.0030			
.428						-.0133				
.444	-.0103									
.487					-.0145					
.559				-.0143						
.600						-.0164				

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 359

UPWT 1059 (IH4) 01 ALONE

ORB. LOWER WING

(RQ3LCE)

MACH (2) = 4.600 ALPHA (1) = -5.000

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.700

-.0181

.736

-.0092

.800

-.0198

.850

-.0213

.900

-.0221

-.0217

-.0210

-.0196

MACH (2) = 4.600 ALPHA (2) = .000 PINF = .16595 Q(PSI) = 2.4581 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. LOWER WING

DEPENDENT VARIABLE CP/CPS

2Y/BW	.2500	.3011	.3480	.4000	.5000	.6000	.7500	.8500	.9500	.9980
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

X/CW

.000

.2657

.3200

-.0084

.001

-.0024

-.0020

.1775

.0583

.2773

.0671

.002

.0274

.0424

.003

.3392

.3554

.004

.1064

.1060

.005

.0393

.0481

.025

.0218

.0449

.0572

.045

.0222

.0261

.0468

.0501

.100

.0006

.153

.177

.0054

.200

.0022

.299

-.0005

.302

.0039

.0263

.428

.0138

.444

.0000

.487

.0105

.559

.0083

.0081

.600

-.0045

.700

.736

.0034

.800

-.0130

.850

-.0171

.900

-.0182

-.0197

-.0176

-.0140

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

PAGE 360

UPWT 1059 (1H4) 01 ALONE

ORB. VERT. TAIL

(RQ3VCE) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 BETA = 5.000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .32905 Q(PSt) = 3.1531 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.4012	.4436	.3308	.5022
.300	.0234	.0185	.0195	
.500		.0147		
.700		-.0234		
.900	-.0188	-.0209	-.0144	

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .32905 Q(PSt) = 3.1531 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3682	.3145	.2386	.3715
.300	.0004	-.0036	.0003	
.500		-.0068		
.700		-.0300		
.900	-.0312	-.0280	-.0221	

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .16595 Q(PSt) = 2.4581 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL

DEPENDENT VARIABLE CP/CPS

Z/BV .2990 .5320 .7650 .9050

X/CV

.000	.3620	.4387	.3497	.5362
.300	.0213	.0211	.0219	
.500		.0158		
.700		-.0124		
.900	-.0066	-.0097	-.0056	

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) 01 ALONE ORB. VERT. TAIL (RQ3VCE)
 MACH (2) = 4.600 ALPHA (2) = .000 PINF = .16595 Q(PSI) = 2.4581 RN/L = 3.0100 CPSTG = 1.8033

SECTION (1) ORB. VERT. TAIL DEPENDENT VARIABLE CP/CPS

Z/BV	.2990	.5320	.7650	.9050
X/CV				
.000	.3358	.2861	.2296	.3750
.300	.0012	-.0007	.0016	
.500		-.0043		
.700		-.0206		
.900	-.0202	-.0187	-.0155	

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DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 563

UPWT 1059 (IH4) T15 ALONE

EXTERNAL TANK

(RQ3TDA)

MACH (1) = 3.700 ALPHA (1) = -5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CP5

X/LT .9250 .9350 .9370 .9750

THETA

151.000

.0843

180.000

.0849 -.0350

210.000

.1360

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .13185 Q(PSI) = 1.2633 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CP11

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000

.3436

.2057

.0466

-.0032

45.000

-.0142

67.500

-.0134

90.000

-.0134

112.500

-.0111

-.0142

-.0148

.0055

-.0150

-.0113

-.0140

-.0134

135.000

-.0140

-.0137

-.0142

-.0126

-.0118

-.0086

157.500

-.0129

-.0118

-.0097

.0045

167.000

-.0135

180.000

.9799

.6862

.7165

.3333

.2140

.0546

.0058

-.0206

-.0218

-.0209

-.0178

-.0141

-.0114

197.000

210.000

220.000

225.000

232.000

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000

-.0113

.0022

45.000

-.0118

-.0118

-.0121

67.500

-.0126

.0074

-.0084

-.0099

-.0087

-.0094

-.0068

-.0076

90.000

-.0129

-.0126

-.0126

-.0126

-.0105

-.0105

-.0084

-.0099

-.0087

-.0094

-.0068

-.0076

112.500

-.0113

-.0118

-.0118

-.0118

-.0045

-.0089

-.0084

-.0099

-.0087

-.0094

-.0068

-.0076

123.000

-.0110

-.0113

-.0113

-.0108

-.0063

-.0074

-.0089

-.0081

-.0079

.0107

-.0068

-.0076

135.000

-.0148

-.0221

-.0233

-.0209

-.0233

-.0027

-.0082

-.0046

-.0057

-.0046

-.0057

-.0066

.0270

157.500

161.000

166.000

180.000

197.000

210.000

220.000

232.000

-.0230

-.0252

-.0297

-.0169

-.0193

-.0215

-.0065

-.0090

-.0084

-.0060

-.0071

-.0032

.0221

-.0230

-.0252

-.0297

-.0169

-.0193

-.0215

-.0065

-.0090

-.0084

-.0060

-.0071

-.0032

.0221

-.0230

-.0252

-.0297

-.0169

-.0193

-.0215

-.0065

-.0090

-.0084

-.0060

-.0071

-.0032

.0221

-.0230

-.0252

-.0297

-.0169

-.0193

-.0215

-.0065

-.0090

-.0084

-.0060

-.0071

-.0032

.0221

-.0230

-.0252

-.0297

-.0169

-.0193

-.0215

-.0065

-.0090

-.0084

-.0060

-.0071

-.0032

.0221

-.0230

-.0252

-.0297

-.0169

-.0193

-.0215

-.0065

-.0090

-.0084

-.0060

-.0071

-.0032

.0221

-.0230

-.0252

-.0297

-.0169

-.0193

-.0215

-.0065

-.0090

-.0084

-.0060

-.0071

-.0032

.0221

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TABULATED SOURCE DATA - 1H4

PAGE 364

UPWT 1059 (1H4) T15 ALONE

EXTERNAL TANK

(RQ3TDA)

MACH (1) = 3.700 ALPHA (2) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000	.0239			
151.000		.0961		
180.000			.0735	-.0307
210.000			.1084	

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .66200-01 Q(PSI) = .98085 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000				.2476	.1373	.0206									-.0047
45.000															-.0196
67.500									.0222				-.0022		-.0073
90.000							-.0061	-.0042	-.0049	-.0049		-.0059	-.0059		-.0066
112.500									-.0015	-.0012	-.0019	-.0019	-.0019		-.0022
135.000											.0018	.0025	.0032		.0042
157.500															.0233
167.000															-.0001
180.000	.9485	.7208	.7488	.3851	.2628	.0873	.0318	-.0044		-.0059			-.0059	-.0032	.0022
197.000					.2565	.0971				-.0063					
210.000						.0919									-.0028
220.000															-.0040
225.000												.0003			
232.000															-.0137

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000												.0041			
45.000												-.0169			-.0158
67.500												-.0069			-.0053
90.000												-.0063			-.0046
112.500												-.0010	-.0063	-.0053	
123.000												.0006	-.0040		.0052
135.000													-.0003	-.0036	.0151
157.500	.0007	-.0102	-.0129	-.0102		.0005	.0046	.0036	.0010	.0016	.0006	.0144			-.0007
161.000	-.0149					-.0153	.0121	-.0051	-.0026	-.0048	-.0048	-.0048			.0207
166.000															
180.000	.0050	.0906	.0073	-.0188	-.0118	-.0075	-.0098	-.0023	-.0044	-.0069	-.0026	-.0044	.0002		.0185
197.000				-.0032						-.0019					.0193
210.000								.0002					-.0041		
220.000					.0209					.0031					
232.000								-.0059				-.0120			

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TABULATED SOURCE DATA - IH4

PAGE 366

UPWT 1059 (IH4) T15 ALONE EXTERNAL TANK

(RQ3TDA)

MACH (2) = 4.600 ALPHA (1) = -5.000

SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS

X/LT	.9250	.9350	.9370	.9750
THETA				
123.000	.0115			
151.000		.0763		
180.000			.0509	-.0281
210.000			.1194	

MACH (2) = 4.600 ALPHA (2) = .000 PINF = .66200-01 Q(PS1) = .98085 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) EXTERNAL TANK DEPENDENT VARIABLE CP/CPS

X/LT	.0000	.0050	.0100	.0400	.0800	.1500	.2000	.2500	.2750	.3000	.3250	.3350	.3500	.3750	.4000
THETA															
.000				.3352	.2010	.0585									.0120
45.000															-.0031
67.500										.0233			-.0015		-.0059
90.000							.0058	-.0052	-.0055	-.0059	-.0066		-.0066		-.0069
112.500								-.0049	-.0049	-.0052	-.0052		-.0049		-.0049
135.000											-.0042		-.0038	-.0028	-.0021
157.500															.0227
167.000															-.0128
180.000	.9926	.6905	.6751	.3079	.2010	.0511	.0136	-.0163		-.0171			-.0159	-.0140	-.0109
197.000					.1994	.0516				-.0167					
210.000						.0583									-.0140
220.000															-.0144
225.000												-.0093			
232.000															-.0156
X/LT	.4250	.4500	.4750	.5000	.5250	.5500	.5750	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
THETA															
.000												.0173			
45.000												-.0081			-.0071
67.500												-.0058			-.0035
90.000												-.0049			-.0019
112.500		-.0066										-.0014	-.0045	-.0029	-.0057
123.000		-.0042										-.0032	-.0011	-.0029	.0146
135.000														.0024	-.0019
157.500		-.0035										-.0022	-.0022	.0037	-.0006
161.000	-.0101	-.0175	-.0202	-.0171		-.0202		.0172	-.0187	-.0162	-.0180	-.0180	-.0187		-.0011
166.000															
180.000															
197.000	-.0093	.0333	-.0050		-.0226	-.0159	-.0159	-.0183	-.0180	-.0205	-.0202	-.0187	-.0198	-.0151	-.0025
210.000															-.0018
220.000															
225.000															
232.000															

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TABULATED SOURCE DATA - IH4

PAGE 366

UPWT 1059 (IH4) T15 ALONE

EXTERNAL TANK

(RQ3TDA)

MAC (2) = 4.600 ALPHA (2) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .0103

151.000

.0586

180.000

.0234 -.0395

210.000

.0597

PAGE 367

(RQ3TDB) (15 APR 76)

PARAMETRIC DATA

RN/L = 3.000 BETA = .000

MACH (1) = 3.700 ALPHA (1) = -10.000 PINF = .32890 Q(PSI) = 3.1518 RN/L = 3.0000 CPSTG = 1.7839

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) T15 ALONE

EXTERNAL TANK

(RQ3TDB)

MACH (1) = 3.700 ALPHA (1) = -10.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA
151.000 .1044
180.000 .1266 -.0367
210.000 .1665

MACH (1) = 3.700 ALPHA (2) = -5.000 PINF = .32890 Q(PSI) = 3.1518 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA
.000 .2646 .1414 .0225 -.0152
45.000 -.0203
67.500 -.0205
90.000 -.0163
112.500 -.0089
135.000 -.0089
157.500 -.0024 -.0012 .0033
167.000 .0141
180.000 .9857 .7792 .7413 .4389 .2822 .0954 .0289 .0056 .0050 .0050 .0049 .0151
197.000 .2780 .1120 .0048
210.000 .1074
220.000 .0146
225.000 .0058
232.000 .0018 -.0136

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA
.000 -.0148 -.0054
45.000 -.0197 -.0191 -.0130
67.500 -.0156 -.0200 -.0204 -.0190 -.0199 -.0186
90.000 -.0154 -.0175 -.0188 -.0193 -.0179 -.0199 -.0195
112.500 -.0091 -.0134 -.0126 -.0097 -.0115 -.0133 -.0137 -.0137 -.0149 -.0149
123.000 -.0055 -.0043 -.0009 -.0043 -.0059 -.0058 -.0062 -.0060 -.0276 -.0194 -.0103
135.000 .0210 -.0048 -.0069 .0049 -.0112 .0189 -.0018 -.0020 -.0021 -.0032 -.0024 -.0130
157.500 -.0187
161.000
166.000 -.0085
180.000 .0365 .0946 -.0066 -.0204 .0095 .0040 -.0017 .0046 .0016 -.0011 .0018 .0007 .0012 .0464
197.000 .0145
210.000 .0037 .0005 .0022 .0544
220.000 .0150
232.000 -.0069 .0009 -.0113

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(RQ3T08)

DEPENDENT VARIABLE CP/CPS

THETA				
123.000	.0291			
151.000		.0841		
180.000			.0925	-.0398
210.000			.1085	

DEPENDENT VARIABLE CP/CPS

[illegible][illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) T15 ALONE

EXTERNAL TANK

(RQ3TDB)

MACH (1) = 3.700 ALPHA (3) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CP5

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .0219

151.000 .0673

180.000 .0604 -.0467

210.000 .0933

MACH (1) = 3.700 ALPHA (4) = 5.000 PINF = .32890 Q(P51) = 3.1518 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CP5

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000 .4274 .2706 .0917 .0060

45.000 .0050

67.500 .0105

90.000 -.0031 -.0147 -.0155 -.0053 -.0098 -.0157

112.500 -.0194 -.0154 -.0160 -.0187 -.0180

135.000 -.0209 -.0195 -.0175 -.0163

157.500 -.0155

167.000 -.0197

180.000 .9816 .6128 .5409 .2453 .1502 .0261 -.0129 -.0277 -.0277 -.0234 -.0214 -.0164

197.000 .1569 .0347 .0376

210.000 .0191

220.000 .0236

225.000 -.0177

232.000 -.0147

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000 .0004 .0014

45.000 -.0075 -.0087 -.0097

67.500 -.0085 -.0123 -.0125 -.0125 -.0129 -.0130

90.000 -.0158 -.0159 -.0157 -.0152 -.0141 -.0151 -.0147

112.500 -.0169 -.0160 -.0156 -.0138 -.0142 -.0148 -.0144 -.0155

123.000 -.0160 -.0165 -.0093

135.000 -.0158 -.0153 -.0149 -.0119 -.0137 -.0142 -.0142 -.0130 .0002 -.0011

157.500 -.0208 -.0170 -.0191 -.0155 -.0185 -.0127 -.0159 -.0151 -.0141 -.0125 -.0096 .0256

161.000 -.0196

166.000 -.0265

180.000 .0004 .0077 -.0267 -.0255 -.0310 -.0201 -.0217 -.0202 -.0165 -.0185 -.0142 -.0140 -.0144 -.0113 .0195

197.000 -.0209 -.0209 -.0166 -.0167 -.0199 .0166

210.000 -.0127 -.0144 -.0171

220.000

232.000

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) T15 ALONE

EXTERNAL TANK

(RQ3TDB)

MACH (1) = 3.700 ALPHA (4) = 5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA
123.000 .0046
151.000 .0553
180.000 .0512 -.0426
210.000 .0788

MACH (2) = 4.600 ALPHA (1) = -10.000 PINF = .16520 Q(PSI) = 2.4476 RN/L = 2.9950 CPSTG = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA
.000 .1756 .0818 .0013 -.0156
45.000 .0229
67.500 .0193
90.000 -.0007 -.0092 -.0091 -.0072 -.0172
112.500 .0003 .0010 -.0001 -.0115
135.000 .0110 .0111 .0133
157.500 .0322
167.000 .0446
180.000 .8974 .7803 .7103 .4815 .3257 .1290 .1561 .0276 .0254 .0239 .0228 .0322
197.000 .3152 .1447 .1357
210.000 .0264
220.000 .0251
225.000 .0189
232.000 -.0042

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA
.000 -.0154 -.0087
45.000 -.0226 -.0241 -.0256
67.500 -.0097 -.0188 -.0198 -.0192 -.0199 -.0190
90.000 -.0129 -.0148 -.0167 -.0178 -.0115 -.0184 -.0190 -.0189
112.500 -.0018 -.0058 -.0054 -.0034 -.0065 -.0076 -.0076 -.0103 -.0001
123.000 -.0101 -.0072 .0086
135.000 .0081 .0081 .0098 .0070 .0053 .0049 .0057 .0056 .0366
157.500 .0398 .0131 .0058 .0166 .0027 .0392 .0116 .0118 .0108 .0092 .0106 .0551
161.000 .0028
166.000 .0114
180.000 .0593 .1231 .0137 -.0001 .0230 .0236 .0158 .0213 .0194 .0139 .0191 .0179 .0181 .0529
197.000 .0309 .0179
210.000 .0222 .0169
220.000 .0279 .0183
232.000 -.0066 -.0094

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TABULATED SOURCE DATA - 1H4

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UPWT 1059 (1H4) T15 ALONE

EXTERNAL TANK

(RQ3T09)

MACH (2) = 4.600 ALPHA (1) = -10.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .0177

151.000 .0918

180.000 .1067 -.0213

210.000 .1471

MACH (2) = 4.600 ALPHA (2) = -5.000 PINF = .16520 Q(PS1) = 2.4476 RN/L = 2.9950 CPSTG = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000

45.000

67.500

90.000

112.500

135.000

157.500

167.000

180.000

197.000

210.000

220.000

225.000

232.000

.2554 .1387 .0254

.0022 -.0084 -.0085 -.0039 -.0119

-.0089 -.0095 -.0100

-.0042 -.0037 -.0046 -.0043

.0002 .0006 .0017 .0047

.0142

.0134

.0032 .0035 .0150

.0039

.0104

.0051

.0067

-.0072

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000

45.000

67.500

90.000

112.500

123.000

135.000

157.500

161.000

166.000

180.000

197.000

210.000

220.000

232.000

-.0112

-.0122

-.0039 -.0120 -.0132 -.0121 -.0137

-.0089 -.0099 -.0132 -.0121

-.0051 -.0061 -.0070 -.0082 -.0075 -.0092

.0015 -.0018 -.0029 -.0031 -.0035 -.0125

.0277 .0006 .0006 .0002 -.0007 -.0005

.0042

.0004

.0029 .0021 .0024

.0018

.0016

.0046

-.0023

-.0069

-.0154

-.0126

-.0122

-.0066

-.0005

-.0031

.0346

.0301

.0366

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) T15 ALONE

EXTERNAL TANK

(RQ3TDB)

MACH (2) = 4.600 ALPHA (3) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .0144

151.000 .0518

180.000 .0397 -.0335

210.000 .0681

MACH (2) = 4.600 ALPHA (4) = 5.000 PINF = .16520 Q(PSI) = 2.4476 RN/L = 2.9950 CPSTG = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000 .4365 .2784 .0958 .0149

45.000 .0000

67.500 .0054 -.0030 -.0047

90.000 .0026 -.0067 -.0075 -.0079 -.0087 -.0090 -.0096

112.500 -.0113 -.0115 -.0120 -.0120 -.0120 -.0120 -.0120

135.000 -.0131 -.0124 -.0115 -.0109

157.500 .0067

167.000 .0157

180.000 1.0021 .6164 .4985 .2161 .1386 .0252 -.0049 -.0196 -.0199 -.0173 -.0163 -.0156

197.000 .1447 .0321 -.0198

210.000 .0340

220.000 .0163

225.000 .0168

232.000 -.0142 .0129

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000 .0149 .0061

45.000 .0034 .0068 .0082

67.500 -.0001 -.0078 -.0091 -.0090 -.0099 -.0095

90.000 -.0104 -.0111 -.0117 -.0115 -.0103 -.0120 -.0102

112.500 -.0117 -.0120 -.0121 -.0093 -.0112 -.0111 -.0108 -.0087 -.0089

123.000 .0054 -.0081 -.0032

135.000 -.0109 -.0111 -.0111 -.0078 -.0098 -.0103 -.0098 -.0095 -.0076

157.500 -.0146 -.0149 -.0160 -.0157 -.0163 .0090 -.0096 -.0088 -.0092 -.0084 -.0078 .0019

161.000 -.0162

166.000 .0179

180.000 -.0101 -.0092 -.0182 -.0181 -.0168 -.0174 -.0181 -.0088 -.0107 -.0084 -.0081 -.0089 -.0068 .0035

197.000 .0177

210.000 .0103 .0084 .0112

220.000 .0060 .0075 .0110

232.000

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) T15 ALONE EXTERNAL TANK

(RQ3TDB)

MACH (2) = 4.600 ALPHA (4) = 5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 -.0068

151.000 .0274

180.000 .0324 -.0246

210.000 .0432

UPWT 1059 (1H4) T15 ALONE

EXTERNAL TANK

(RQ3TDC) (15 APR 76)

REFERENCE DATA

```

SREF = 2690.0000 SQ.FT.   XMRP = .0000 INCHES
LREF = 1290.3000 INCHES   YMRP = .0000 INCHES
BREF = 1290.3000 INCHES   ZMRP = .0000 INCHES
SCALE = .0100

```

PARAMETRIC DATA

RN/L = 5.000 BETA = .000

MACH (1) = 3.700 ALPHA (1) = -5.000 PINF = .54715 Q(P51) = 5.2436 RN/L = 4.9900 CPSTG = 1.7839

SECTION 1.1 EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT	.0000	.0050	.0100	.0400	.0800	.1500	.2000	.2500	.2750	.3000	.3250	.3350	.3500	.3750	.4000
THETA															
.000				.2695	.1438	.0235									-.0170
45.000															-.0207
67.500															-.0183
90.000							-.0024	-.0145	-.0147	-.0143	-.0140		-.0187		-.0143
112.500									-.0085	-.0076	-.0083		-.0077		-.0090
135.000											-.0018		-.0016	-.0017	-.0024
157.500															.0077
167.000															.0278
180.000	.9826	.7668	.7344	.4329	.2765	.0924	.0271	.0068		.0073			.0068	.0066	.0141
197.000					.2740	.1101				.0065					
210.000						.1042									.0173
220.000															.0067
225.000															
232.000												.0017			-.0121

X/LT	.4250	.4500	.4750	.5000	.5250	.5500	.5750	.6000	.6500	.7000	.7500	.8000	.8500	.8750	.9000
THETA															
.000								-.0126				-.0068			
45.000								-.0166				-.0120			-.0110
67.500				-.0180				-.0164	-.0174	-.0171	-.0169	-.0164			-.0148
90.000		-.0151		-.0155		-.0155		-.0159		-.0155	-.0177	-.0184	-.0184		-.0189
112.500		-.0095		-.0088		-.0096		-.0103	-.0120	-.0130	-.0134	-.0136	-.0139		-.0151
123.000													-.0262	-.0169	-.0112
135.000		.0035		-.0030		-.0016		-.0057	-.0065	-.0058	-.0060	-.0064			-.0136
157.500	.0221	-.0031	-.0042	.0100		-.0102		.0074	-.0025	-.0028	-.0031	-.0042	-.0027		.0460
161.000	-.0168														
166.000				-.0061						.0017					
180.000	.0416	.0819	-.0071	-.0202	.0140	.0036	-.0008	.0042	-.0002	-.0020	.0006	-.0006	-.0004		.0573
197.000				.0163						-.0006					.0556
210.000								.0025				.0019			
220.000				.0092						-.0011					
232.000								-.0063				-.0105			

X/LT	.9250	.9350	.9370	.9750
------	-------	-------	-------	-------

THETA
123.000 .0341

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 377

UPWT 1059 (IH4) T15 AL(NE EXTERNAL TANK

(RQ3TDC)

MACH (1) = 3.700 ALPHA (1) = -5.000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA
151.000 .0616
180.000 .0857 -.0435
210.000 .1037

MACH (1) = 3.700 ALPHA (2) = .000 PINF = .54715 Q(PSI) = 5.2436 RN/L = 4.9900 CPSTG = 1.7839

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA
.000 .3457 .2034 .0542 -.0079
45.000 -.0125
67.500 -.0122
90.000 -.0120
112.500 -.0121
135.000 -.0111
157.500 -.0045
167.000 .0075
180.000 .2784 .6615 .6761 .3288 .2076 .0538 .0025 -.0131 -.0130 -.0119 -.0113 .0009
197.000 .2093 .0675
210.000 .0659
220.000 -.0039
225.000 -.0097
232.000 -.0031

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA
.000 -.0082 -.0079
45.000 -.0103 -.0080
67.500 -.0084 -.0084 -.0073 -.0066 -.0062 -.0065
90.000 -.0114 -.0111 -.0098 -.0085 -.0082 -.0066 -.0065
112.500 -.0112 -.0089 -.0083 -.0070 -.0073 -.0076 -.0077 -.0076 -.0062
123.000 -.0042 -.0084 -.0071 -.0074 -.0099 -.0092 -.0087 -.0081 -.0126
135.000 .0010 -.0124 -.0041 -.0163 -.0028 -.0101 -.0095 -.0083 -.0084 -.0058
157.500 -.0157
161.000
166.000 -.0164
180.000 .0273 .0360 -.0109 -.0009 -.0108 -.0151 -.0097 -.0122 -.0091 -.0086 -.0071 .0359
197.000 -.0006
210.000 -.0074 -.0104 -.0108
220.000 -.0026 -.0069
232.000 -.0055 -.0091

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TABULATED SOURCE DATA - IH4

PAGE 378

UPWT 1059 (IH4) T15 ALCNE

EXTERNAL TANK

(RQ3TDC)

MACH (1) = 3.700 ALPHA (2) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .0298

151.000 .0380

180.000 .0493 -.0425

210.000 .0828

MACH (2) = 4.600 ALPHA (1) = -5.000 PINF = .27520 Q(PSI) = 4.0915 RN/L = 5.0100 CPSTG = 1.8033

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .0000 .0050 .0100 .0400 .0800 .1500 .2000 .2500 .2750 .3000 .3250 .3350 .3500 .3750 .4000

THETA

.000 .2530 .1352 .0244 -.0103

45.000 -.0146

67.500 -.0120

90.000 .0033 -.0069 -.0071 -.0073 -.0077 -.0080 -.0087

112.500 -.0022 -.0019 -.0028 -.0030 -.0038

135.000 .0024 .0025 .0023 .0018

157.500 .0131

167.000 .0262

180.000 .9904 .7339 .7565 .4122 .2666 .0896 .0303 .0100 .0094 .0089 .0084 .0166

197.000 .2623 .1062

210.000 .1017

220.000 .0165

225.000 .0100

232.030 .0054 -.0055

X/LT .4250 .4500 .4750 .5000 .5250 .5500 .5750 .6000 .6500 .7000 .7500 .8000 .8500 .8750 .9000

THETA

.000 -.0099 -.0055

45.000 -.0134 -.0122 -.0115

67.500 -.0092 -.0129 -.0132 -.0132 -.0138 -.0132 -.0137

90.000 -.0093 -.0098 -.0106 -.0110 -.0116 -.0130 -.0132 -.0137

112.500 -.0037 -.0043 -.0047 -.0045 -.0058 -.0072 -.0080 -.0082 -.0091 -.0097

123.000 -.0147 -.0107 -.0047

135.000 .0058 .0005 .0011 .0024 .0010 -.0018 -.0016 -.0020 -.0024 .0221 -.0072

157.500 .0247 .0003 .0112 -.0038 .0097 -.0014 -.0016 -.0019 -.0028 -.0025 .0365

161.000 -.0067

166.000 .0071

180.000 .0356 .0815 .0080 -.0100 .0107 .0091 .0021 .0027 .0012 -.0014 .0008 .0003 .0000 .0391

197.000 .0215

210.000 .0043 .0001 .0006 .0431

220.000 .0100 .0014

232.000 -.0052 -.0090

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(RQ3TDC)

SECTION ()EXTERNAL TANK	DEPENDENT VARIABLE CP/CPS
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20
21	21
22	22
23	23
24	24
25	25
26	26
27	27
28	28
29	29
30	30
31	31
32	32
33	33
34	34
35	35
36	36
37	37
38	38
39	39
40	40
41	41
42	42
43	43
44	44
45	45
46	46
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52	52
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60	60
61	61
62	62
63	63
64	64
65	65
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67	67
68	68
69	69
70	70
71	71
72	72
73	73
74	74
75	75
76	76
77	77
78	78
79	79
80	80
81	81
82	82
83	83
84	84
85	85
86	86
87	87
88	88
89	89
90	90
91	91
92	92
93	93
94	94
95	95
96	96
97	97
98	98
99	99
100	100

THETA				
123.000	.0200			
151.000		.0635		
180.000			.0668	-.0292
210.000			.0932	

SECTION ()EXTERNAL TANK	DEPENDENT VARIABLE CP/CP5
1	1.0000
2	1.0000
3	1.0000
4	1.0000
5	1.0000
6	1.0000
7	1.0000
8	1.0000
9	1.0000
10	1.0000
11	1.0000
12	1.0000
13	1.0000
14	1.0000
15	1.0000
16	1.0000
17	1.0000
18	1.0000
19	1.0000
20	1.0000
21	1.0000
22	1.0000
23	1.0000
24	1.0000
25	1.0000
26	1.0000
27	1.0000
28	1.0000
29	1.0000
30	1.0000
31	1.0000
32	1.0000
33	1.0000
34	1.0000
35	1.0000
36	1.0000
37	1.0000
38	1.0000
39	1.0000
40	1.0000
41	1.0000
42	1.0000
43	1.0000
44	1.0000
45	1.0000
46	1.0000
47	1.0000
48	1.0000
49	1.0000
50	1.0000
51	1.0000
52	1.0000
53	1.0000
54	1.0000
55	1.0000
56	1.0000
57	1.0000
58	1.0000
59	1.0000
60	1.0000
61	1.0000
62	1.0000
63	1.0000
64	1.0000
65	1.0000
66	1.0000
67	1.0000
68	1.0000
69	1.0000
70	1.0000
71	1.0000
72	1.0000
73	1.0000
74	1.0000
75	1.0000
76	1.0000
77	1.0000
78	1.0000
79	1.0000
80	1.0000
81	1.0000
82	1.0000
83	1.0000
84	1.0000
85	1.0000
86	1.0000
87	1.0000
88	1.0000
89	1.0000
90	1.0000
91	1.0000
92	1.0000
93	1.0000
94	1.0000
95	1.0000
96	1.0000
97	1.0000
98	1.0000
99	1.0000
100	1.0000

[illegible][illegible]

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TABULATED SOURCE DATA - IH4

PAGE 380

UPWT 1059 (IH4) T15 ALONE

EXTERNAL TANK

(RQ3TDC)

MACH (2) = 4.600 ALPHA (2) = .000

SECTION (1) EXTERNAL TANK

DEPENDENT VARIABLE CP/CPS

X/LT .9250 .9350 .9370 .9750

THETA

123.000 .0139

151.000 .0447

180.000 .0404 -.0342

210.000 .0684

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TABULATED SOURCE DATA - IH4

PAGE 381

UPWT 1059 (IH4) SBN16 ALONE SOLID RCKT. BSTR.

(RQ3SEA) (19 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 1.200 ALPHA = .000

MACH (1) = 3.700 BETA (1) = -5.000 PINF = .13177 Q(PS1) = 1.2625 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PS1															
90.000	.9792		.1105	.1199		.1277									
180.000			.0680		.0671										
225.000															
247.500															
260.000															
270.000		.1349	.1013	.1001	.1013	.1179	.1047	.0088							
315.000															
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PS1															
90.000	-.0079	.0459	-.0229					.0288				.0688			
180.000	-.0059	.0212	-.0276	.0037				.0617				.0395			
210.000					.0127	.0760		.0252							
215.000							.0150		.0097	.0228					
225.000		-.0043	-.0237	.0012				.0156			.0079				
240.000								.0216			.0186				
247.500	-.0084										.0276	.0366			
270.000	-.0067	-.0074	-.0276	.0008				.0226				.0383			
315.000	-.0108														

MACH (1) = 3.700 BETA (2) = .000 PINF = .13177 Q(PS1) = 1.2625 RN/L = 1.2000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PS1															
90.000	.9840		.1142	.1213		.1284									
180.000			.1201		.1259										
225.000															
247.500															
260.000															
270.000		.1382	.1048	.1112	.1146	.1220	.1080	.0182							
315.000															

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(RQ35EA)

DEPENDENT VARIABLE CP/CPS

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

PAGE 383

UPWT 1059 (IH4) SEN16 ALONE SOLID RCKT. BSTR. (RQ3SEA)
 MACH (2) = 4.600 BETA (1) = .000 PINF = .66400-01 Q(PSI) = .98320 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	.9818		.0809	.0888		.0967					.0006		-.0085		
180.000				.1066		.1140							-.0150		
225.000										-.0060			-.0163		-.0183
247.500												-.0197	-.0207	-.0213	-.0220
260.000								.0265							
270.000		.1357	.0980	.1050	.1105	.1230	.1092		.0108	-.0020	-.0051	-.0227	-.0230	-.0234	-.0237
315.000												-.0240			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	-.0034	.0619	.0039					.0070				.0122			
180.000	-.0103	.0068	-.0020	.0028				.0221			.0213	.0300			
210.000					.0070	.0175		.1057							
215.000							.0145		.0077	.0484					
225.000		.0049	-.0020	.0044				.0077			.0040				
240.000								.0093			.0213				
247.500	-.0224										.0175	.0332			
270.000	-.0237	.0049	-.0020	.0049				.0028							
315.000	-.0240												.0400		

MACH (2) = 4.600 BETA (2) = 5.000 PINF = .66400-01 Q(PSI) = .98320 RN/L = 1.2000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	.9914		.0963	.1007		.1071							-.0194		
180.000				.1790		.1817					.0130		.0011		
225.000										.0010			-.0042		-.0072
247.500												-.0089	-.0105	-.0132	-.0148
260.000								.0287							
270.000		.1382	.1023	.1089	.1120	.1244	.1116		.0109	-.0029	-.0043	-.0165	-.0172	-.0172	-.0182
315.000												-.0188			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	-.0157	.0573	-.0059					.0055				.0212			
180.000	-.0012	.0188	-.0118	.0144				.0692			.1002	.0915			
210.000					.0238	.5319		.1304		.0442					
215.000							.1728		.0344			.0125			
225.000		.0119	-.0118	.0144				.0389				.0699			
240.000								.0329				.0692	.0757		

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) SBN16 A ONE SOLID RCKT. BSTR.

(RQ3SEA)

MACH (2) = 4.600 BETA (2) = 5.000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.7000	.7600	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
PSI												
247.500	-.0158											
270.000	-.0162	-.0019	-.0118	.0045				.0029				.0527
315.000	-.0188											

PSI

247.500

270.000

315.000

-.0158

-.0162

-.0188

-.0019

-.0118

.0045

.0029

.0527

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(RQ3SEB) (15 APR 76)

PARAMETRIC DATA

RN/L = 3.000 ALPHA = .000

DEPENDENT VARIABLE CP/CPS

P51

PS:

DEPENDENT VARIABLE CP/CP5

P51

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

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UPWT 1059 (1H4) SBN16 ALONE SOLID RCKT. BSTR.

(RQ35EB)

MACH (1) = 3.700 BETA (2) = .000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE (P/CP5)

[illegible]

MACH (1) = 3.700 BETA (3) = 5.000 PINF = .32900 Q(PSI) = 3.1528 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - 1H4

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UPWT 1059 (1H4) SBN16 ALONE SOLID RCKT. BSTR. (RQ3SEB)
 MACH (1) = 3.700 BETA (4) = 10.000 PINF = .32900 Q(PSI) = 3.1528 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	.9634		.1063	.1068		.1113					.0392		-.0258		
180.000			.2726			.2709							.0309		
225.000										.0180			.0078		.0074
247.500												-.0052	-.0115	-.0150	-.0174
260.000								.0174							
270.000		.1367	.1112	.1188	.1217	.1212	.1085		-.0055	-.0139	-.0115	-.0229	-.0290	-.0321	-.0314
315.000											-.0300				
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	-.0199	.0156	-.0387					-.0020				.0135			
180.000	.0266	.0506	-.0253	.0261				.1776			.1869	.1397			
210.000					.0511	.5492		.1793		.0759					
215.000							.1575		.0250		.0031				
225.000		.0171	-.0356	.0091				.1092			.0859				
240.000								.0661			.0780	.0770			
247.500	-.0181														
270.000	-.0184	-.0170	-.0418	-.0176				-.0020				.0820			
315.000	-.0187														

MACH (2) = 4.600 BETA (1) = -5.000 PINF = .16560 Q(PSI) = 2.4534 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	.9974		.0978	.1093		.1186							-.0115		
180.000			.0683			.0728					-.0077		-.0062		
225.000										-.0146			-.0087		-.0101
247.500												-.0105	-.0109	-.0112	-.0112
260.000								.0186							
270.000		.1366	.1062	.1140	.1182	.1200	.1393		.0052	-.0063	-.0088	-.0093	-.0096	-.0095	-.0076
315.000											.0000				
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	-.0056	.0360	-.0177					.0222				.0539			
180.000	.0001	.0340	-.0185	.0003				.0391			.0418	.0312			
210.000					.0076	.0799		.0376		.0215					
215.000							.0249		.0128		.0103				
225.000		.0024	-.0157	-.0013				.0188			.0239				
240.000								.0227			.0324	.0371			

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DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) SBN16 A. ONE SOLID RCKT. BSTR.

(RQ3SEB)

MACH (2) = 4.600 BETA (1) = -5.000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

PSI

247.500 -.0024

270.000 -.0020 -.0035 -.0213 -.0024

315.000 -.0036

.0245

.0379

MACH (2) = 4.600 BETA (2) = .000 PINF = .16560 Q(PST) = 2.4534 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1.00	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

PSI

90.000 1.0045

180.000

225.000

247.500

260.000

270.000

315.000

.1010

.1111

.1245

.1188

.1304

-.0071

-.0015

-.0084

-.0070

-.0080

-.0087

-.0089

-.0101

-.0073

-.0074

-.0076

X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 .9600 .9900

PSI

90.000 -.0015

180.000 -.0009

210.000

215.000

225.000

240.000

247.500 .0000

270.000 .0004

315.000 -.0017

.0402

-.0142

-.0173

.0089

.0113

.3075

.1868

.0243

.0286

.1195

.0289

.0277

.0259

.0247

.0307

.0080

.0071

.0583

.0671

.0772

.0413

MACH (2) = 4.600 BETA (3) = 5.000 PINF = .16560 Q(PST) = 2.4534 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1.00	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
--------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

PSI

90.000 .9938

180.000

225.000

247.500

260.000

270.000

.0997

.1055

.1969

.1123

.1967

.0035

.0137

-.0148

.0048

-.0017

-.0062

-.0084

-.0105

-.0049

-.0117

-.0135

X/LSRB .7000 .7800 .8000 .9000 .9100 .9200 .9250 .9300 .9400 .9500 .9600 .9900

.1395

.1119

.1216

.1258

.1273

.1.47

.0276

.0071

-.0051

-.0057

-.0129

-.0149

-.0160

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(R03SEB)

DEPENDENT VARIABLE (P/CPS)

DEPENDENT VARIABLE (P/CPS)

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) SBN16 ALONE SOLID RCKT. BSTR.

(RQ3SEC) (15 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 5.000 ALPHA = .000

MACH (1) = 3.700 BETA (1) = .000 PINF = .54680 Q(PSI) = 5.2588 RN/L = 5.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	.9778		.1080	.1168		.1239							-.0072		
180.000			.1264	.1308							-.0084		-.0056		
225.000										-.0138			-.0065		-.0043
247.500												-.0089	-.0070	-.0053	-.0043
260.000								.0129							
270.000		.1353	.1111	.1193	.1236	.1242	.1120		-.0056	-.0132	-.0119	-.0090	-.0079	-.0053	-.0057
315.000												-.0098			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	.0003	.0693	-.0275					.0530				.0764			
180.000	.0074	.0318	-.0309	.0008				.0749				.0600			
210.000					.0248	.3091		.1230		.0312					
215.000							.1743		.0314			.0111			
225.000		.0443	-.0297	-.0010				.0888				.0735			
240.000								.0735				.0795	.0735		
247.500	.0005														
270.000	-.0055	.0909	-.0318	-.0004				.0533					.0393		
315.000	-.0077														

MACH (1) = 3.700 BETA (2) = 5.000 PINF = .54680 Q(PSI) = 5.2588 RN/L = 5.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	.9750		.1055	.1109		.1164							-.0182		
180.000			.1941	.1933							.0104		-.0071		
225.000										-.0009			-.0011		-.0042
247.500												-.0071	-.0095	-.0116	-.0131
260.000								.0140							
270.000		.1343	.1107	.1193	.1227	.1228	.1114		-.0063	-.0140	-.0132	-.0146	-.0173	-.0181	-.0186
315.000												-.0186			

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(RQ3SEC)

DEPENDENT VARIABLE C²/CPS

DEPENDENT VARIABLE CP/CPS

[illegible]

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (1H4) SBN16 ALONE SOLID RCKT. BSTR.

(RQ3SEC)

MACH (2) = 4.600 BETA (2) = 5.000 PINF = .27610 Q(PSI) = 4.0883 RN/L = 5.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CIP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
90.000	1.0029		.1012	.1072		.1138							-.0132		
180.000			.1966			.1951					.0136		.0119		
225.000										.0045			.0102		.0096
247.500												- .0010	-.0037	-.0041	-.0045
260.000							.0258								
270.000		.1371	.1119	.1227	.1266	.1262	.1146		.0045	-.0051	-.0059	-.0083	-.0108	-.0124	-.0129
315.000												-.0134			
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
90.000	-.0075	.0307	-.0198					.0205				.0374			
180.000	.0106	.0189	-.0212	.0079				.0910			.1148	.0837			
210.000					.0252	.4165		.1273		.0368					
215.000							.1420		.0232		.0048				
225.000		.0071	-.0223	.0034				.0868			.0634				
240.000								.0582			.0719	.0635			
247.500	-.0051														
270.000	-.0043	.0034	-.0226	-.0031				.0317							
315.000	-.0051											.0511			

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) SBN16 AL(NE SOLID RCKT. BSTR.

(RQ3SEF) (19 APR 76)

REFERENCE DATA

SREF = 2690.0000 SQ.FT. XMRP = .0000 INCHES
 LREF = 1290.3000 INCHES YMRP = .0000 INCHES
 BREF = 1290.3000 INCHES ZMRP = .0000 INCHES
 SCALE = .0100

PARAMETRIC DATA

RN/L = 3.000 ALPHA = .000

MACH (1) = 3.700 BETA (1) = -5.000 PINF = .329[4 Q(PSI) = 3.1532 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CF/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
.000		.0892	.0661	.0684	.0709	.0709	.0570		-.0167	-.0244	-.0205	-.0174	-.0159	-.0142	-.0098
45.000												-.0175			
180.000	.9795		.1771	.1907		.1945							.0029		
270.000				.1299		.1342							-.0137		
315.000										-.0244			-.0161		-.0168
337.500												-.0170	-.0170	-.0171	-.0172
350.000								-.0031							
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
.000	-.0047	.1087	-.0325	-.0071				.0534				.0394			
45.000	-.0081														
180.000	-.0002	.0495	-.0319					.0885				.1052			
270.000	-.0046	.0081	-.0337	-.0021				.0766			.0847	.0569			
300.000					.0118	.1181		.0513		.0120					
305.000							.0230		.0006		-.0092				
315.000		.0053	-.0238	-.0046				.0228			.0118				
330.000								.0292			.0223	.0211			
337.500	-.0072														

MACH (1) = 3.700 BETA (2) = .000 PINF = .329[4 Q(PSI) = 3.1532 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CF/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
.000		.1350	.1116	.1194	.1238	.1232	.1106		-.0041	-.0137	-.0127	-.0100	-.0084	-.0067	-.0056
45.000												-.0107			
180.000	.9901		.1107	.1202		.1272							-.0061		
270.000				.1288		.1333							-.0045		
315.000										-.0149			-.0072		-.0053
337.500												-.0067	-.0078	-.0066	-.0054
350.000								.0135							

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TABULATED SOURCE DATA - 1H4

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UPWT 1059 (IH4) S8N16 ALONE SOLID RCKT. BSTR.

(RQ3SEF)

MACH (1) = 3.700 BETA (2) = .000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE (P/CPS)

[illegible]

MACH (1) = 3.700 BETA (3) = 5.000 PINF = .32904 Q(PSI) = 3.1532 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) SBN16 ALONE SOLID RCKT. BSTR.

(RQ3SEF)

MACH (1) = 3.700 BETA (4) = 10.000 PINF = .32904 Q(PSI) = 3.1532 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
.000		.2591	.2449	.2560	.2561	.2530	.2358		.0446	.0322	.0281	.0252	.0196	.0196	.0181
45.000												.0082			
180.000	.9561		.0411	.0434		.0404							-.0128		
270.000				.1177		.1189					-.0130		-.0213		
315.000										.0127			.0022		.0003
337.500												.0203	.0182	.0143	.0138
350.000								.0595							
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
.000	.0181	.1490	-.0065	.0241				.1111				.0407			
45.000	-.0065														
180.000	-.0160	.0793	-.0325					.0219				.0660			
270.000	-.0242	.0084	-.0378	-.0155				.0028			.0128	.0129			
300.000					.0121	.3665		.1153		.0390					
305.000							.3723		.1186		.0549				
315.000		.1007	-.0272	-.0011				.1480			.1387				
330.000								.1043			.1422	.1431			
337.500	.0128														

MACH (1) = 3.700 BETA (5) = 20.000 PINF = .32904 Q(PSI) = 3.1532 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
.000		.4636	.4403	.4407	.4373	.4332	.4036		.1304	.1195	.1112	.1011	.0978	.1054	.1066
45.000												.0526			
180.000	.8553		.0105	.0093		.0044							-.0358		
270.000				.1050		.0997					-.0150		-.0295		
315.000										.0594			.0403		.0399
337.500												.0823	.0812	.0810	.0881
350.000								.1441							
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
.000	.1069	.3219	.0212	.1134				.3048				.0456			
45.000	.0368														
180.000	-.0361	.0153	-.0414					-.0100				.0052			
270.000	-.0321	.0100	-.0427	-.0300				-.0021			.0060	.0172			
300.000					.0629	.5598		.1951		.1005					
305.000							.6934		.3075		.1591				

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) S6N16 ALJNE SOLID RCKT. BSTR.

(RQ3SEF)

MACH (1) = 3.700 BETA (5) = 20.000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
PSI												
315.000		.2327	-.0070	.0436				.3142			.2939	
330.000								.2441			.3077	.3201
337.500	.0875											

MACH (1) = 3.700 BETA (6) = 40.000 PINF = .32904 Q(P51) = 3.1532 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
.000		.8711	.8318	.8243	.8197	.8116	.7473		.4110	.4053	.4304	.4444	.4151	.4212	.4184
45.000												.2522			
180.000	.4617		-.0160	-.0266		-.0277							-.0432		
270.000				.0893		.0811					-.0058		-.0132		
315.000										.2038			.2072		.2103
337.500												.3605	.3531	.3432	.3507
350.000								.3215							

MACH (1) = 3.700 BETA (6) = 40.000 PINF = .32904 Q(P51) = 3.1532 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
PSI												
.000	.4124	.8486	.0953	.4008				.7206				.0523
45.000	.1931											
180.000	-.0322	-.0096	-.0269					-.0272				-.0341
270.000	-.0116	.0492	-.0337	-.0028				.0245			.0490	.0927
300.000					.2614	.7766		.3222		.2596		
305.000							1.2003		.8109		.4242	
315.000		.4842	.0647	.1921				.6881			.6259	
330.000								.5983			.6999	.7074
337.500	.3426											

MACH (1) = 3.700 BETA (7) = 48.000 PINF = .32904 Q(P51) = 3.1532 RN/L = 3.0000 CPSTG = 1.7839

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
.000		.9963	.9613	.9516	.9369	.8953	.7873		.5968	.5880	.6139	.5996	.5591	.5710	.5682
45.000												.3435			
180.000	.3272		-.0255	-.0265		-.0367							-.0286		
270.000				.0893		.0733					-.0006		.0007		
315.000										.2847			.2793		.2865
337.500												.4859	.4741	.4666	.4746

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) SBN16 ALONE SOLID RCKT. BSTR.

(RQ3SEF)

MACH (1) = 3.700 BETA (7) = 48.000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CF/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
350.000								.3878							
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
.000	.5622	1.0737	.1260	.5351				.9380				.0553			
45.000	.2729														
180.000	-.0280	-.0133	-.0213					-.0234				-.0354			
270.000	.0017	.0521	-.0263	.0178				.0459			.0874	.0973			
300.000					.3124	.7623		.2863		.1120					
305.000							1.3182		.9897						
315.000		.5762	.0791	.2706				.9423			.8360				
330.000								.7960			.9252				
337.500	.4673										1.0302	.6908			

MACH (2) = 4.600 BETA (1) = -5.000 PINF = .165F7 Q(PSI) = 2.4545 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CF/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
.000		.0917	.0634	.0647	.0678	.0708	.0550		-.0048	-.0134	-.0132	-.0113	-.0105	-.0091	-.0074
45.000												-.0116			
180.000	.9835		.1555	.1726		.1790							.0026		
270.000				.1176		.1246							-.0050		
315.000										-.0150			-.0105		-.0072
330.000												-.0118	-.0107	-.0091	-.0071
337.500								.0078							
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
.000	-.0033	.0267	-.0201	-.0041				.0250				.0412			
45.000	-.0049														
180.000	-.0010	.0523	-.0170					.0640				.0913			
270.000	-.0025	-.0028	-.0209	.0043				.0357			.0662	.0544			
300.000					.0055	.0999		.0816		.0212					
305.000							.0224		-.0036			-.0111			
315.000		.0019	-.0150	-.0005				.0091				.0152			
330.000								.0121				.0151	.0217		
337.500	-.0042														

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) SBN16 ALONE SOLID RCKT. BSTR.

(RQ3SEF)

MACH (2) = 4.600 BETA (2) = .000 PINF = .16567 Q(PSt) = 2.4545 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CF/CP5

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
.000		.1391	.1106	.1202	.1255	.1273	.1151		.0075	-.0051	-.0067	-.0095	-.0089	-.0081	-.0076
45.000												-.0101			
180.000	1.0045		.1010	.1111		.1188							-.0084		
270.000			.1245	.1304							-.0015		-.0070		
315.000										-.0071			-.0080		-.0073
337.500											-.0097		-.0087	-.0080	-.0074
350.000								.0260							
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
.000	.0004	.0079	-.0185	.0073				.0247				.0413			
45.000	-.0017														
180.000	-.0015	.0402	-.0142					.0243				.0593			
270.000	.0009	.0063	-.0173	.0089				.0286				.0671			
300.000					.0113	.3075		.1195							
305.000							.1869		.0289	.0307	.0610				
315.000		.0075	-.0169	.0089				.0277			.0080				
330.000								.0259			.0871				
337.500	.0000										.0583	.0778			

MACH (2) = 4.600 BETA (3) = 5.000 PINF = .16567 Q(PSt) = 2.4545 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CF/CP5

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
.000		.1942	.1732	.1898	.1916	.1884	.1734		.0247	.0110	.0072	.0071	.0050	.0040	.0031
45.000												.0004			
180.000	.9973		.0636	.0663		.0692							-.0116		
270.000			.1181			.1227					-.0036		-.0076		
315.000										.0015			.0000		-.0024
337.500												.0058	.0042	.0027	.0019
350.000								.0456							
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
.000	.0038	.0259	-.0197	.0101				.0576				.0415			
45.000	-.0033														
180.000	-.0078	.0625	-.0170					.0312				.0505			
270.000	-.0034	-.0032	-.0205	-.0021				.0260			.0544	.0325			
300.000					.0154	.4109		.1081		.0242					
305.000							.2767		.0713		.0293				

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TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) SBN16 ALONE SOLID RCKT. BSTR.

(RQ3SEF)

MACH (2) = 4.600 BETA (3) = 5.000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900
PSI												
315.000		.0086	-.0205	.0015				.0985			.1096	
330.000								.0695			.1012	.1038
337.500	.0019											

MACH (2) = 4.600 BETA (4) = 10.000 PINF = .16567 Q(PSI) = 2.4545 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
.000		.2640	.2535	.2667	.2654	.2616	.2443		.0534	.0377	.0308	.0267	.0209	.0206	.0201
45.000												.0117			
180.000	.9772		.0416	.0420		.0382							-.0165		
270.000				.1126		.1137							-.0168		
315.000										.0165	-.0047		.0055		.0032
337.500												.0218	.0172	.0154	.0154
350.000								.0692							

MACH (2) = 4.600 BETA (5) = 20.000 PINF = .16567 Q(PSI) = 2.4545 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
.000	.0207	.0582	-.0146	.0285				.1021				.0426			
45.000	.0014														
180.000	-.0106	.0755	-.0166					.0026				.0296			
270.000	-.0150	-.0134	-.0241	-.0094				.0051			.0139	.0118			
300.000					.0157	.3704		.1371		.0492					
305.000							.3713		.1193		.0610				
315.000		.0169	-.0201	.0055				.1266			.1525				
330.000								.0945			.1489	.1594			
337.500	.0152														

MACH (2) = 4.600 BETA (5) = 20.000 PINF = .16567 Q(PSI) = 2.4545 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP/CPS

X/LSRB	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
.000		.4671	.4498	.4497	.4466	.4409	.4174		.1391	.1218	.1099	.1043	.1068	.1161	.1183
45.000												.0566			
180.000	.8457		.0075	.0034		-.0025							-.0283		
270.000				.1004		.0955					-.0036		-.0176		
315.000									.0631				.0467		.0528
337.500											.0851	.0892	.0937		.0979

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (1H4) SBN16 ALONE SOLID RCKT. BSTR.

(RQ3SEF)

MACH (2) = 4.600 BETA (5) = 20.000

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP CPS

[illegible]

MACH (2) = 4.600 BETA (6) = 40.000 PINF = .1656'' Q(PSI) = 2.4545 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE CP. CPS

[illegible]

DATE 20 APR 76

TABULATED SOURCE DATA - IH4

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UPWT 1059 (IH4) SBN16 ALONE SOLID RCKT. BSTR.

(RQ3SEF)

MACH (2) = 4.600 BETA (7) = 48.000 PINF = .16567 Q(PSI) = 2.4545 RN/L = 3.0000 CPSTG = 1.8033

SECTION (1) SOLID RCKT. BSTR

DEPENDENT VARIABLE (P/CPS)

X/LSR2	.0000	.0040	.0250	.0500	.0750	.1000	.1100	.1150	.1300	.1500	.2000	.3000	.4000	.5000	.6000
PSI															
.000		.9599	.9241	.9181	.9033	.8754	.7783		.5627	.5624	.5918	.6128	.5663	.5758	.5716
45.000												.3502			
180.000	.3156		-.0141	-.0153		-.0151							-.0194		
270.000				.0866		.0750					.0107		.0117		
315.000										.2701			.2809		.2825
337.500												.4944	.4770	.4693	.4759
350.000								.3881							
X/LSRB	.7000	.7800	.8000	.9000	.9100	.9200	.9250	.9300	.9400	.9500	.9600	.9900			
PSI															
.000	.5645	1.0686	.2119	.5654				.9878				.0550			
45.000	.2867														
180.000	-.0250	.0043	-.0071					-.0081				-.0177			
270.000	.0124	.0662	-.0091	.0267				.0575			.1156	.0617			
300.000					.3183	.7923		.2801		.2002					
305.000							1.3347		1.1111		.9051				
315.000		.5924	.1009	.2854				.9786			1.0079				
330.000								.7864			1.0564	.6273			
337.500	.4679														

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